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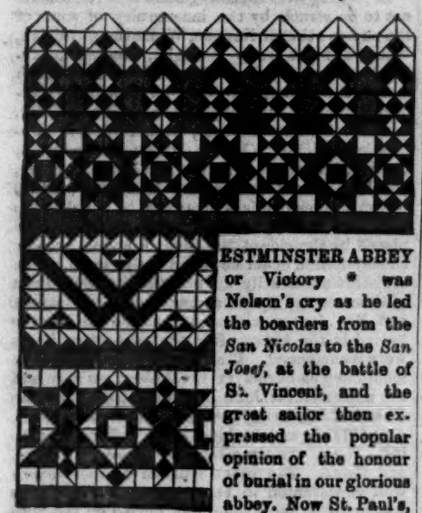
Buried in Westminster Abbey.



WESTMINSTER ABBEY or Victory * was Nelson's cry as he led the boarders from the *San Nicolas* to the *San Josef*, at the battle of St. Vincent, and the great sailor then expressed the popular opinion of the honour of burial in our glorious abbey. Now St. Paul's, which contains the ashes of Nelson and Wellington, has come to be looked upon as the chief resting-place of military and naval commanders, and St. Peter's at Westminster as that of all other celebrities.

The registers of Westminster Abbey have been badly kept in former years, and those that exist refer only to a comparatively recent period. It is believed that the registers of the sixteenth and previous centuries are hopelessly lost, but those that still remain are of the greatest interest, and Colonel Chester has conferred a great boon upon the public by the labour he has bestowed upon the work of editing and annotating these registers, the results of which have been printed by the Harleian Society.† A work of national importance has thus been performed by the devotion of an American gentleman, and the public spirit of a private society of some three or four hundred members.

In the full notes which are added in elucidation of the original entries, Colonel Chester has been able to set right many blunders committed by the makers of the entries. In 1841 and 1843 certain extracts from these registers were published by Messrs. Nichols & Son, but Colonel Chester found upon examining these with the original that they were untrustworthy and practically worthless. The volume now under notice therefore contains the first complete and accurate copy of these important documents that has ever been presented to the public. The register of marriages begins in the year 1655, that of baptisms in 1608, and that of burials in 1607. One of the first points that strike us in turning over the pages is the large number of uninteresting names that occur in all three of the registers: thus forgotten names of officials of the abbey, of persons living in the immediate neighbourhood, &c., appear on the same pages with those of world-wide fame. The marriages are of little interest; there is, however, that one between Sir John Denham and Margaret Brooks on May 25, 1665, which only brought unhappiness and distrust, and was dissolved in January, 1666-7, by the death, under rather mysterious circumstances, of the wife. The marriage of Sir Samuel Morland to his second wife, Carola Harsnett, on October 26, 1670; and to his third wife, Anne Fielding, on November 16, 1675–6, are here registered; as is also the marriage of the great physician, Dr. Thomas Willis, to Elizabeth Calley (wrongly named Collier in the Register), on September 1, 1672. The Marriage Act of 1753 put an end to indiscriminate marriages in the Abbey, and three only are recorded during the next century. From June, 1859, to January, 1875, thirty-four marriages were solemnized; but two only of these call for mention here,—viz., those of Dean Stanley and the Earl of Carnarvon. The baptisms may be passed by as of little interest, and we then come to the burials, the register of which chiefly fills the book.

As we have already noted, the list begins in January 1606–7, so that all the early burials are unmentioned; and besides this, the register of those since that date is not altogether complete. Colonel Chester observes,—"It has always been customary to attribute the mutilation of parish registers, as well as the spoliation of monuments and sepulchral brasses, to the rough soldiers or the stern officials of the Commonwealth. Even if this were true generally, there is good reason to believe that part, at least, of the damage done to the Abbey Registers was the work of some over-zealous loyalist who had the custody of them, or access to them immediately after the Restoration. Else, why do we fail to find in them, for instance, the name of a single member of the Protector's family? Yet Cromwell himself was buried in the Abbey, as were his mother, his sister, his daughter, his son-in-law, and his grandchild. Why do we also fail to find the names of Bradshaw and Pym, and Strode and Bond, and May, all of which appear in the royal warrant for disinterment in 1661, and of whose places of burial there must have been some record, as their coffins were readily found?" In these cases the disinterment is registered, but not the original burial. In the case of the Duke of Marlborough, it is the reverse of this. On August, 1722, the great General was buried in the vault at the east end of Henry VII.'s Chapel, but between August and October, 1744, his remains were disinterred and removed to Blenheim, where they now are. No record of this disinterment is to be found in any of the Abbey registers. Having pointed out the deficiencies of these books, Colonel Chester adds that there is a reverse to the picture. "It is equally true that many persons have the historical reputation of interment in the Abbey, for whom its gates were never opened." Even the monumental inscriptions are not always to be trusted, —"in many instances they contain nothing to indicate that the persons to whose memory they are inscribed are not actually there interred, and it would be difficult to determine whether the stereotyped '*Hic jacet*,' and '*In Memory of*,' were not regarded as synonymous." Besides disinterments, where the dead have been turned out of their graves, there have been re-interments of bodies removed from other places for more honourable burial here: thus, on Saturday, March 26th, 1859, the remains of John Hunter, the great anatomist, were removed from the Church of St. Martin-in-the-Fields, by the Royal College of Surgeons, and were re-interred on the Monday afternoon following, in the north aisle of the Abbey; and, on January 16th, 1852, the supposed remains of William Lyndwoode, Keeper of the Privy Seal to Henry VI., and Bishop of St. David's from 1442 to the time of his death (October 22, 1446), were removed from the crypt of St. Stephen's Chapel, Westminster, and were buried in the north cloister of the Abbey, on March 6th following.

There is no record of the burial of the unfortunate Major André in the registers, but in the funeral-book is the following entry:—"Major André's remains, brought from America by order of H.R.H. the Duke of York in a sarcophagus, were this 28th day of November, 1821, removed from Islip's Chapel, and deposited nearly in front of his monument." He was executed as a spy by Washington at Tappan, in the State of New York, 2nd October, 1780, and his remains were subsequently removed to this country in order that they might have honourable interment in the Abbey. Colonel Chester, finding that the public interest in the unhappy fate of this brave young officer is still as intense and earnest as ever it was, has gathered some information concerning his ancestry not hitherto known. Colonel Chester does not, however, make mention of a very curious and interesting story which has long been current regarding André. It is stated that at the time of his death a young lady in England, to whom he was engaged, was sitting at the piano when she suddenly screamed out and fell back in her chair in a swoon. On her recovery she explained that André had appeared to her hanging from a gibbet. Her friends attempted to comfort her by explaining that her vision must be valueless, because, as her lover was an English officer, he could not be hanged, and if his life was taken at all, it would be by the musket-ball. The story goes on to tell that when the news actually arrived it was found that execution had taken place at the very time the young lady swooned. Unfortunately, when this pretty story is brought to the test of fact, it is found to fail utterly. André was attached, but not engaged, to the beautiful and accomplished Honora Sneyd, who

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* So it is given by Southey in his "Life of Nelson," but the more generally received version, "A peerage or Westminster Abbey!" is more logical, because the words "Westminster Abbey or victory" are not antithetical, and Nelson could not expect burial in the Abbey if he died defeated. He did indeed obtain victory with life, but the peerage was given to his commanding officer, Jervis, whose orders he disobeyed.

† The Marriage, Baptismal, and Burial Registers of the Collegiate Church or Abbey of St. Peter, Westminster. Edited and annotated by Joseph Lemuel Chester. (Publications of the Harleian Society, vol. x.). London, 1876.

afterwards became the wife of Richard Lovell Edgeworth (the father of Maria Edgeworth), and died of consumption on the 30th of April, 1780, five months and two days before the execution of André. The representatives of André's family utterly deny the truth of the story, and consider the whole as a fabrication. Still, it is difficult to believe that there was no foundation or nucleus, however small, upon which the complete story has been raised.

The list of royal personages who have been buried in Westminster Abbey is a long one, but the names of Edward the Confessor, Henry II., Edward I. and his queen Eleanor, Edward III. and his queen Philippa, Richard II., Henry V. and his wife Katherine of France, Lady Anne, wife of Richard III., Henry VII., Edward VI., Anne of Cleves, Mary I., and Elizabeth do not occur in these registers. Henry V.'s widow, the "Kate" of Shakspeare, died in Bermondsey Monastery on the 3rd of January, 1437, and her body was brought to St. Katherine's by the Tower on the 8th of February following; from thence it was moved to St. Paul's, and afterwards was buried at Westminster in our Lady's Chapel. In the reign of Henry VII. it was taken up again, and remained neglected above-ground in a coffin of boards behind the east end of the choir for more than two centuries. At length the remains were deposited in St. Nicholas's Chapel, under the monument of Sir George Villiers when the vault was made for the interment of Elizabeth, Duchess of Northumberland, in 1776. The third entry on the roll of burials is that of the Princess Mary, third daughter and sixth child of James I. and Anne of Denmark, who died in the year 1607, aged two years, five months, and eight days. Here Colonel Chester has been able to set right a blunder made in the register, and perpetuated on the child's monument in the Abbey. The day of death, according to the chroniclers, was September 16th, and that of burial the 23rd of the same month, which is in accordance with the records of the birth, but the register and monuments give the date as December 16th, a manifest error because the Court presented a scene of unusual gaiety during the Christmas holidays of 1607. Colonel Chester remarks, "Whatever may have been the vices of that Court, and the morality of the period, it is simply impossible—if for no other reasons than those of Court etiquette, but it is hoped for far better ones—that these things could have taken place, if the royal child had been dead and buried only nine days, or as would have been more probable, was then lying a corpse in the palace. There can be little doubt that the transcriber of the old register misread December for September, and that the present inscription on the monument was cut after the new register was in use, and the date taken therefrom." A few entries on and we find the name of Henry, Prince of Wales, who died on November 6th at St. James's Palace, and was buried on December 8th under the monument of his grandmother, Mary, Queen of Scots, whose remains had been brought from Scotland in the previous month. In March, 1625, James I. followed his children, and was buried on May 5th in Henry VII.'s vault. James's daughter, the unfortunate and much-loved Queen of Bohemia, lived on till 1662, when she was buried in a vault by the side of her brother, Prince Henry. Lady Anne, Clarendon's daughter, and James, Duke of York's first wife, was buried in the royal vault April 5, 1671. The gallant and impetuous Prince Rupert found rest in the Abbey in 1682. His cousin, Charles II. followed him in February, 1685, and was buried in Henry VII.'s chapel. James II. found his resting-place abroad, and the next crowned head buried here was Mary II., in the vault of her uncle Charles II. Then followed William Duke of Gloucester, son of the Princess Anne, in 1700, and his father, Prince George of Denmark, in 1708. Queen Anne was buried beside her sister and husband in Charles II.'s vault in 1714; and after her the chief royal personages who found a resting-place in the Abbey were Caroline, queen of George II., her son, Frederick, Prince of Wales, who died at Leicester House on April 13, 1751; then the king himself in 1760, and five years afterwards his favourite son, the Duke of Cumberland, called by the Scots "the Butcher of Culloden." The mother of George III., Augusta, Princess of Wales, was buried in the royal vault in 1772; and the last royal burial in the Abbey was a foreigner, Marie, consort of Louis XVIII. of France in 1810. Her remains were taken up in the following year and "delivered to Mr. Martin, undertaker, for the purpose of being removed to Sardinia." Windsor, which was long the rival claimant for the honour of being the final resting-place of our kings and queens, has, during the last century quite supplanted Westminster Abbey in royal favour.

We will now notice the names of some of the chiefs of the nobility, the statesmen, the soldiers, and the sailors who have found an honoured grave in the Abbey. The first entry in the Register of Burials relates to Lady Hunsdon, the widow of Sir Henry Carey, K.G., first Lord Hunsdon, and informs us that both these distinguished courtiers of Queen Elizabeth were "buried in St. John Baptist's Chapel." The first Duke of Buckingham, who fell a victim to Felton's knife at Portsmouth, was buried "in a little chapel on the north side of King Henry VII.'s monument." The third Earl of Essex, son of Elizabeth's Essex, and himself the famous commander-in-chief of the Parliamentary army, was laid near the Hunsdons in 1646. After the Restoration, Monk, Duke of Albemarle, in 1670, and Hyde, Earl of Clarendon, who died an exile at Rouen in 1674, were both buried here. Colonel Chester informs us that no less than twenty members of Clarendon's family were buried in the Abbey.

The great Admiral Sir Cloudesley Shovell, who was shipwrecked on the Scilly rocks, Oct. 22, 1707, was laid in the south aisle. Doubts still exist as to the parentage and birth of this naval hero. It is asserted that he was born of a poor family and was originally an ostler, but another authority affirms that he came of an ancient family not "inconsiderable for estate." The great Duke of Marlborough was buried here in 1722; Harley, 2nd Earl of Oxford, founder of the Harleian Library of Books and Manuscripts in 1741; Admiral Sir Charles Wager, son of a naval officer of high standing, and one of the glories of the English navy, in 1743; and Field-Marshal Wade, a gallant soldier, a brilliant commander, and the successful constructor of military roads in the Highlands of Scotland, in 1748. We now come to the burial of the famous statesman, Pitt, Earl of Chatham, on June 9, 1778, which was performed at the expense of Parliament; and that of the Earl of Mansfield, which took place here at his own particular desire. Pope's "silver-tongued Murray" was one of the most brilliant ornaments of Westminster School, and his affection for that institution was very strong. This feeling is expressed in the first passage of his will. "I desire to be buried privately, and from the love I bear to the place of my early education I wish it to be in Westminster Abbey." In the same year (1806) and within the space of a few months the doors of the Abbey were opened to admit the remains of the two great rival statesmen, Pitt and Fox, who were joined by Sheridan ten years afterwards, by Grattan in 1820, by Castlereagh (then Marquis of Londonderry) in 1822, by Canning in 1827, and by Wilberforce in 1833. This list of great men takes only a small space in print, but what a history there is behind it of struggles of the past, and of deeds the remembrance of which Englishmen will not willingly let die. We now come to recent times, when nearly every entry in the register refers to a distinguished man. Lord Macaulay was buried here in 1860, the Earl of Dundonald in the same year, Earl Canning in 1862, Sir James Outram and Lord Clyde in 1863, Lord Palmerston in 1865, Sir George Pollock in 1872, and Lord Lytton in 1873.

The next series of distinguished men to be noted are the Ecclesiastics, commencing with Dr. Isaac Casaubon, the eminent scholar and prebendary of Canterbury, who was buried in July, 1614, at the entrance of St. Benedict's Chapel. Stephen Marshall, the great preacher during the Commonwealth, was buried in the Abbey in November, 1655; but his remains were removed with those of many others, after the Restoration, to a common pit in the churchyard. Colonel Chester has relieved the memory of this distinguished man from a great scandal. Pepys started the story that two of Marshall's daughters, Anne and Rebecca, were actresses and mistresses of Charles II. as late as 1672. Now, at the date of his will, his wife was dead, and five of his daughters were already married (three of them, at least, to clergymen), and had several children. His remaining daughter, Susan, was unmarried, but more than twenty-one years of age, as she proved her father's will. The remains of Archbishop Usher were placed in St. Paul's Chapel on April 17, 1656, by order of Cromwell,—an action that stands out in bright contrast to the treatment of Marshall by the Royalists. The renowned Isaac Barrow, who died Master of Trinity College, Cambridge, was buried in the Abbey on May 7, 1677. Bishop Sprat, who was dean of the church, was buried (1713) on the south side of St. Nicholas's Chapel, and the witty Dr. South, a prebendary (1716), at the foot of the steps going up to the altar. The last entry on the Register refers to one of the most distinguished churchmen of modern times,—Connop Thirlwall, late bishop of St. David's, who is described upon his monument as "Scholar, Historian, Theologian." He was buried on August 3, 1875. Two of the best-known head masters of Westminster School—the learned Camden, in 1623, and the terrible Dr. Busby, in 1695—were buried in the Abbey, which has naturally been the resting-place of several of the celebrated men who have filled the office of dean. It was well that Sir Henry Spelman (1641) should rest near his fellow antiquary, Camden.

In looking over these registers it is impossible not to be struck by the incongruity of some of the names: thus if Newton, Willis the physician, Woodward the early geologist, Herschel, Livingstone, and Lyell are here, so are Mr. Joseph Dalby, the inventor of that "sweet boon to children" known as "Dalby's Carminative" (1784), and Dr. William Buchan, author of the "Domestic Medicine" (1805). If Francis Beaumont, Cowley, Davenant, Dryden, Addison, Congreve, and Johnson are here, so are Mrs. Aphra Behn, whose gravestone is a disgrace to the Abbey; and Tom Brown, whose writings deserve to be placed by the side of Mrs. Behn's, and no greater condemnation could be meted out to them. The registers necessarily do not contain the names of Chaucer and Spenser; nor do they of Drayton and Ben Jonson, although the two latter were buried in the Abbey after the present registers were commenced. Besides the authors already mentioned as buried in the Abbey, we may add the names of Sir John Denham (1669), Nicholas Rowe (1718), Prior, poet and statesman (1721), Gay (1732); and in later days Gifford, Campbell, Cary, the translator of Dante, Dickens, and Grote. The great musical composers are well represented in the Abbey. Purcell, who was organist for a time, was buried on the 26th of November, 1695, and Dr. Blow on the 8th of October, 1708. Blow was appointed organist in 1669, but resigned the position in 1680 in favour of Purcell, and resumed it on the latter's death in 1695. Handel was buried in the south cross on April 20th, 1759, and by his will he directed that a monument should be erected to his memory in the Abbey at a cost not exceeding 600*l*. Dr. Arnold was another organist of the Abbey, and he was buried in the north aisle on October 29th, 1802. Shield followed in 1829, and Sir Sterndale Bennett in 1875.

The doors of the Abbey have opened with great facility to receive the remains of our great actors and actresses, and the profession is well represented. Betterton was buried in the east cloister, on May 2, 1710; and Mrs. Oldfield in the south aisle, on October 27th, 1730. Colonel Chester remarks on the latter entry,—"Although for reasons that were doubtless potential, her remains were allowed honourable burial within the walls of the Abbey, the records of the Chapter show that the reigning Dean and his successors, Bishops Bradford and Wilcocks, resolutely drew the line there, and peremptorily refused permission to her paramour, General Churchill, to erect a monument to her memory." Mrs. Bracegirdle, the pupil of Betterton, was buried in the east cloister (1748); Mrs. Cibber, Dr. Arne's sister, in the north cloister (1766); and Spranger Barry, Garrick's rival, in the same place (1777). Barry's widow married another husband, one Crawford, "who spent her money and broke her heart," and as Mrs. Crawford she was buried in the north cloister (1801). Garrick was buried in the south cross, on February 1st, 1779; and Mrs. Garrick, who "lived thirty years a faithful wife, and forty-three years a faithful widow," followed him in 1822.

Watchmakers may be proud that two of their great men have found their way into the Abbey. Thomas Tompion, called "The Father of English Watchmakers," was buried in the middle aisle in 1713, and George Graham, who married his niece, was laid in the same grave. Artists of all kinds are but ill represented in the Abbey, and architects are perhaps the most fortunate in this respect. We have already mentioned Denham as a poet, and although he was not actually an architect, he held the office of Surveyor-General of his Majesty's Buildings,

and he left by will "all his fees, being twenty shillings per day" as surveyor for the rebuilding of St. Paul's Cathedral "towards that noble and pious work," and also 100*l.* "as a further remembrance of affection to the same." Sir William Chambers was buried in the South Cross in 1795, and Sir Charles Barry in the nave in 1860. The engineers are well represented by Telford, who was buried in the nave (1834), and by Robert Stephenson, who was laid beside Telford in 1859. There are many more names of interest in these Registers, which we have not room to notice, and Colonel Chester proposes at some future time to add to these, for he writes,—"It may be as well to add that the editor has a large collection, from which he eventually may decide to print a list of such persons as were probably buried in the Abbey, but whose names do not appear in the registers, with the evidences." In conclusion, we need only observe that the more Colonel Chester's book is used, the more the extreme accuracy of the mass of illustrative matter that he has collected is apparent.

HANDBOOK OF THE ENVIRONS OF LONDON.

FOR the selection of the environs of London as the subject of a special "Murray's Guide-book," in addition to those devoted to counties and to London itself, there can be no apology necessary. London itself contains matter enough and to spare for a separate book, without counting the environs; but the district immediately around London is so full of places having special historical interest, and this interest is so intimately connected with the proximity of the district to the capital, that merely to take the places of interest according to the several counties in which they occur, besides over-weighting the handbooks in comparison with those of other counties, would have the additional drawback of ignoring the peculiar character of the district around the capital, and of the interest belonging to it. For though in the days to which this Handbook* often takes us back, London did not live out of town to the same extent as at present, it is around this neighbourhood that we find the scenes associated with much of the historic life of London, the favourite retreats of princes and statesmen, of men of fashion and men of letters,—places whose names have been familiar for generations in the political, social, and literary annals of England. It is this mingling of the past with the present that gives their peculiar interest to many of the suburban districts and villages around, and now partially in connexion with, London. In the midst of some village street of little apparent interest, we come upon a high brick wall of different work from such as is made "in these degenerate days," presenting piers with some quaint sculptured device flanking an old ornamental gateway, and find ourselves suddenly on classic ground, and before the favourite house of some person famous in the chronology of the Tudor or the Stuart period, built when this was a retired country-place, long before the railway system and the encroachment of ordinary fourth-rate houses had half-robbed the place of its old charm. In the older villages around London, too, there is a special character difficult to define, but easily felt by those whose perceptions are awake to such local peculiarities: perhaps it is partly the contrast with the great city not far off; but certainly the sub-London villages seem peculiarly to preserve an old-fashioned simplicity of character, as if in protest against the advancing and bustling and artificial life of the city. These and other varied interests inherent in the districts around London will be found to be very well illustrated in the Handbook before us, where the reader is presented with the most interesting facts in the history of estates and villages, mansions and churches, with their various reminiscences of those who had in former days dwelt in and around them, told in a piquant though laconic style, which makes interesting reading in itself, apart from its use as a guide to the district.

The scheme of the book comprehends "a description of every town and village, and all places of historical, antiquarian, and artistic interest, within a circuit of twenty miles round London, and of the more important places lying beyond that boundary." For the metropolis "an inner circle of four miles has been taken" (four miles radius, we presume, but it is not distinctly stated) and places within that circle are not included in the present book. The accounts, we are assured, are written in every instance "from personal examination and inquiry." The field thus defined includes all of Middlesex outside London, a large part of Essex, Surrey, Kent, and Hertfordshire, and some smaller portions of Berkshire and Buckinghamshire. The amount of historical interest and reminiscence connected with this area of country is extraordinary when one comes to put together, as the author does in his preface, even the names of the leading places; yet very little has been hitherto done to illustrate it. Lysons's "Environs" (published about 1791) was rather too much of the nature of a parish or county history, for reference more than entertainment; and other works since have erred either on the side of tediousness or of inaccuracy and insufficiency. The object of Mr. Thorne's book is not to be a full and exhaustive history, but a guide and memorandum as to the general facts connected with the places named and the associations which belong to them, and a description of whatever there is of interest in them at present, from the pictures and works of art in a mansion to the welding and boring of cannon at Woolwich. The arrangement is alphabetical, with no division or grouping as to neighbourhood: this is the best and simplest arrangement, if the book were only to be made one of reference in regard to places the names of which are known; but if it were to be used (as such a book often is) to discover what and where are the objects of interest in any particular part of the country, it will be less easy to use it this way. A map of the district included would lessen this difficulty, and should certainly accompany the next edition.

Looking through the accounts of some of the principal places mentioned, there can be no doubt that the chief point of interest in the Essex division of the book is Waltham, to which additional attention is, perhaps, directed just at present owing to the literary interest that has been lately aroused over the story of the early English king who rebuilt the abbey, and whose name is so closely connected with it. The early history, traditional and authentic, of the foundation, is succinctly told; the reader is also reminded of the preference which Henry VIII. showed for the place, for hunting purposes chiefly, and that it was there that he first conferred with Cranmer, then resident in the district, in regard to his celebrated divorce case. The description of the church architecturally is very complete for the space it occupies; one remarkable peculiarity, the existence in the triforium arcade of shafts recessed as if for two orders of arches, while there is only one wide square-soffited arch, is not mentioned. But we may take occasion to note that here, as elsewhere in the book, the author shows himself a very efficient architectural critic, and a far better guide on such points than the average of guide-books presents us with. He refers to the dispute which took place some years ago as to whether this is or is not Harold's church, when Mr. Freeman, in a pardonable zeal for his hero, strongly upheld the former view. "Not proven" would be our verdict so far, though there is a good deal to be said on both sides. The question as to the real date of this and other early work in England can only be settled, if at all, by a systematic collection and comparison of all the dated examples of Norman in the kingdom with the undated ones; after that a deduction may be drawn from style. In the mean time there is this in favour of Mr. Freeman's view, that England had become, before the Conquest, far more Norman than is generally recognised, and the actual advent of William was only the crowning event in a process of Normanising England which had been going on for some time. A consideration of this fact may do something to modify the existing views of most architects as to the date of Norman remains in England. In regard to the present restoration of Waltham Abbey by Mr. Burges, Mr. Thorne is evidently ill-pleased, though he does not commit himself to saying anything very positive. We will be less reticent, and say plainly that the filling in of the tower arch (now the "east end" of the church) with work that is pronounced French Gothic inside and no Gothic at all outside, has done about as much to spoil the appearance and the associations of this portion of the building as could well be done; and the designs in the windows and the gilt gingerbread sculpture underneath constitute a type of art only fit for children. What has been done in the way of preserving and restoring the existing Norman work has been very well and conscientiously carried out; but the new work, considering its surroundings, is deplorable. In speaking of Waltham Cross, Mr. Thorne feelingly laments the mistake which was made in its restoration (which had been rendered necessary to preserve it from ruin) in recutting and renewing the old work so much that it is even now difficult, and will in a few years be impossible, to distinguish old work from new, and "as an example of the art of the time of Edward I., its value is irretrievably destroyed."

Epping Forest, of course, receives due attention, and we have a summary of the recent history of the contest in regard to enclosure, and also of that now nearly obsolete institution, the "Epping Hunt," at which, in the beginning of the present century, it is recorded that as many as "200 men in pink" had been seen; but in 1873 the author says the only representative of the 200 "was the sad and serious-looking huntsman, who seemed oppressed with the weight of his responsibilities,—or the strength of the King's Oak ale." Most readers will agree with him that such a parody had better be suppressed; but it is one of the peculiarities of the district around London (and a *portion* within London) that old customs and ideas, however obsolete and useless, die very hard: there is a spirit of traditional conservatism hanging about the air of the capital which tends to keep old fashions going, and is not certainly without its interest, though often standing sadly in the way of the path of improvement. In describing some of the places about the forest, Mr. Thorne seems to have got into some mistake about Theydon Green, which is entirely a separate locality from the three Theydons (Theydon Bois, Theydon Gernon, and Theydon Mount), about two miles further west, and more in the centre of the forest district. We remember it as a place which seemed to consist of about two cottages, an elaborate modern Gothic well-shed standing on a beautiful sloping green, and a brick-pillar post-office with stumps placed at the angles to prevent the cattle injuring it; about as quiet a pretty nook as one could come upon. Among places of past interest in the country is Havering-atte-Bower, two or three miles from Romford; a place which very probably many of our readers have never heard of, but which was the seat of a royal palace or pleasure-house, founded by Edward the Confessor, the last royal resident being James I. A stone of the Royal Bower, with the arms of Edward upon it, is preserved in Bower House, an eighteenth-century house built about the time the palace was going to ruin. At Havering our attention is also called to "that venerable symbol of civilisation," the stocks and whipping-post, under a huge elm facing the church-yard, like the celebrated stocks in "My Novel."

In the Hertford part of the environs Hatfield House occupies a prominent place; its characteristics are too well known to need mention here. Mr. Thorne, who seems a very good hand at bringing in amusing anecdotes connected with the places named, quotes from Pepys his confession that one day, as he walked through the house, "would fain have stolen a pretty dog that followed me, but could not, *which troubled me*," and, indeed, the remarks and naïve confessions of that unblushing soliloquist may be quoted *apropos* of many scenes and places in and about London. To St. Alban's, which the author rightly estimates to be "the most interesting place for its historical associations and antiquarian remains within the like distance of London," a long article is devoted, and we may congratulate the author upon the interesting and full account of the Abbey Church which he has put together. We entirely echo his remark in regard to the discovery of the Roman theatre in 1847, that such a "find" at so late a period indicates how much there may be awaiting our discovery if only the search were made for it; but the English Government, which might do so much, at so little comparative cost, to aid archæology, seems even more apathetic on the subject than the English public. It seems almost inconceivable, as we have said before now, that such a discovery as this should have been made, so interesting in every sense, historical and archæological, and then that the ground should be covered in again almost immediately, merely on the plea of the value of the land, without any interposition on the part of the Government to preserve and give compensa-

* Handbook of the Environs of London, alphabetically arranged, containing an account of every town and village, and of all places of interest within a circle of twenty miles round London. By James Thorne, F.S.A. London: John Murray. 1876.

tion for such a landmark of the early history of the country.

Coming to the inner circle of Middlesex, we find ourselves among names which seem now to have become almost part of London, and which have a more familiar and less ancestral sound in our ears than those we have been referring to. Fulham, Kilburn, Hampstead, Highgate, Hornsey, Tottenham, have now but prosaic associations for most of us, save the reminiscence of that delightful view from the top of Hampstead which, in anything like fine weather, and under an evening light especially, has always its charm. Yet Hampstead had its day of brilliancy and fashion, as a country watering-place conveniently adjacent to town, and during the season "consorts [*sic*] of vocal and instrumental musick by the best masters" were advertised in the London papers of the early part of the last century as given "at the Great Room at the Wells," at the awful hour of "11 in the forenoon"; tickets, "by reason that the room is very large," at one shilling each, in due recognition of the law of supply and demand. "Well Walk" still has its pump and its row of trees with a shady walk beneath them, though how long the spirit of improvement will allow these to remain seems doubtful. Here it was that Leigh Hunt talked with Keats one day, when the latter, sitting on the bench against the wall there, "told me" (says Hunt), "with unaccustomed tears in his eyes, that his heart was breaking." The Upper Flask tavern, on the edge of the Heath, too, is memorable for ever as the scene of part of Clarissa Harlowe's persecution; we do not gather at all clearly from Mr. Thorne's description of the changes it has gone through, whether any part of the actual house is still in existence,—whether it was pulled down or only added to and altered. It was also a summer resort of the Kit-cat Club. Finchley-common (now no more a common) has its reminiscences of Dick Turpin and Jack Sheppard, and other scoundrels, who contributed to keep up the excitement of travelling in the days of our forefathers. Memories are numerous in connexion with the old private houses in the district around Tottenham, where the village cross (Tottenham High Cross) has a history also, and among other associations the figure of Izaak Walton is connected with the place, the Swan Inn at Tottenham having been one of his constant places of call. Among reminiscences in connexion with the adjacent country-houses is the horrible story of Mr. Ardesoif, once of Grove House, who, after a cock-fight, in which his bird was defeated, thrust the unfortunate creature into the fire, and, in the state of rage to which he worked himself up, brought on an attack of *delirium tremens* of which he himself died three days after. Cowper (but this Mr. Thorne does not mention) versified the story, as a kind of "awful warning," but he characteristically represents the brutal squire as dying on the spot by a supernatural "judgment." We find no explanation of the name of "Tottenham *Court* Road," so well known as one of the main thoroughfares out of London, but which leads nowhere near Tottenham itself. It led to the manor of Tottenham Court, mentioned in Domesday. A delightful bit of description is quoted from Bernard Barton, the poet, as to his recollections of one of the old houses here, in a green lane diverging from the high road which runs through Tottenham. "It was a large house, with an iron palisade and a pair of iron gates in front, and a huge stone eagle on each pier. Leading up to the steps by which you went up to the hall-door was a wide gravel walk, bordered in summer time by huge tubs, in which were orange and lemon trees, and in the centre of the grass plot stood a tub yet larger, holding an enormous aloe. The hall itself, to my fancy then lofty and wide as a cathedral would seem now, was a famous place for battledore and shuttlecock, and behind was a garden equal to that of old Alcinous himself. My favourite walk was along a turf by a long straight pond, bordered with lime-trees." To those who do not know the outskirts of London, this short description may convey a notion of the characteristic type of old house to be found there and hardly (in perfection) anywhere else, with its massive richly-tinted brick piers and enclosure walls, its broad level walks, and the ample dimensions of the square solidly-built house, so unpretending outside, so exceedingly comfortable inside; expressive, more perhaps than any other form of English house, of settled comfort and dignity without ostentation, but not without something of artistic effect of an unobtrusive but genuine character.

Just within Middlesex, too, in its furthest corner in an elbow of the river, is Hampton Court, with its more aristocratic memories, from the days of show and splendour under Wolsey and Henry VIII. and, later, Charles II., to its improvement under William III., and its days of awful boredom under the heavy rule of his successors, concerning which Lord Hervey tells us "no mill-house ever went in a more constant track, or a more unchanging circle," than the Court at Hampton under George II. The author rightly draws attention to the very questionable authenticity of many of the pictures in the galleries to which great names are appended, and also to the far superior interest of the tempera pictures of Mantegna, which are passed over by most of the visitors with little appreciation of their value. The tapestries in the hall are perhaps deserving of more than the reserved commendation given to them, nor do we understand what is meant by saying that the drawing is "dry." But we must just glance with our guide at one or two places in the southern counties, Kent and Surrey. Clapham is not regarded as a name of much interest now, but it is old enough, existing in the time of Alfred as Clapenham, and in Domesday Book as Clopeham, and lately, at the commencement of the present century, notable as the headquarters of the anti-slavery movement, when Wilberforce was the centre of what was called the "Clapham Sect." Thackeray, in "The Newcomes," touches in passing on the peculiarly religious atmosphere of Clapham, where also the "Bible Society" had its origin. In connexion with this it is rather startling to read in the next paragraph of "a *tract* of 250 acres"; but this is not a tract for distribution, unless into building lots. Among the more picturesque and romantic places of interest, Knole of course claims a large share of attention, and the writer's account of it may serve to inform those who cannot now see it of what there is to see when the former liberal policy is restored (as we hope the present owner may see fit to restore it before long), and the house made as accessible as it formerly was. In reference to a place not much talked about,—Stoke d'Abernon, in Surrey, Mr. Thorne returns to the charge in regard to "restoration." He says:—

> "There was a church at Stoke when Domesday Survey was made, and it is customary in architectural works to speak of the present church as 'containing vestiges of Saxon architecture.' No vestige is visible now, nor has there been any for many years past. The chancel arch was semicircular, and was by some called Saxon, but it was taken down and a pointed arch substituted, when the church was *restored* in 1854. The church was restored anew, in accordance with more advanced ecclesiastical tastes, in 1866, and in the course of the two restorations so much was taken down and rebuilt, so much re-cast, remodelled, and re-chiselled, so much old work replaced by new, and so much new work made to look like old, that it would now be unsafe to trust the apparent antiquity or attempt to discuss the relative ages of any parts of the fabric."

Those who undertake such a task as Mr Thorne has undertaken must often have the spoliation and defacement of our ancient relics of architecture painfully forced upon their notice, and it is only right that they should make a protest, in hope of inculcating on the public mind the desirability of at least attempting to preserve what is left of such precious records; we cannot think the expression too strong, when we consider how utterly and entirely irreparable is the loss of these monuments of our former life when once taken away, or defaced and altered. At the same time we must say that it behoved the writer, before he made charges of destruction, to have assured himself thoroughly of their correctness, and this he has not always done.

We could be well contented to linger long over this book, which teems with suggestions and reminiscences, and enables us as we turn the pages to people the houses and districts around London with figures of the past, representatives of generations each of which had its own peculiar character, its own value in the picturesque and changeful drama of English social history. We see at Chiswick the garden where the Earl of Burlington was wont to enjoy the society of his poetic friends, and where, according to Gay:—

> "Pope unloads the boughs within his reach,
> The purple vine, blue plum, and blushing peach"—

(a proceeding which would have been just as congenial, certainly, to Gay himself), and with equal interest the mulberry-tree in Hogarth's garden, which the village children had an annual feast from. We come across Clive's country-house at Esher, where the country folk thought that "the great wicked lord had ordered the walls to be made so thick in order to keep out the devil, who would one day carry him away bodily." Fulham is a perfect mine of recollections too long to specify. We can dream over the precincts of Ham House, where "the lofty ornamental iron gates, flanked with piers and urns, and carrying the arms of Tollemache and Murray, which Walpole a century ago complained were never opened, have remained closed ever since, unpainted and rusting away," and which suggested Hood's vision of the Haunted House. In his account of this most interesting brick house, by the way, the writer might have pointed out how the additions to the original structure are distinguishable by the difference in bond,—one part being worked in "Old English bond," the other in "Flemish." We come across traces of Nelson at Merton-place, and read his letter ordering the improvements in the house, and the strong netting round the pond, lest "my dear little Horatia" should tumble in; and Lord Minto's extraordinary description of the household where Sir William and Lady Hamilton "and the whole set of them" were living with Nelson at his expense, with most pronounced love-making on Lady Hamilton's part, who seems to have taken the initiative in these matters. We pass over Richmond Green to find (*teste* Horace Walpole) "Lord Bath, Lord Lonsdale, and half a dozen more of White's Club, sauntering at the door of a house they have taken there, and come to every Saturday and Sunday to play whist," and look in later in the chronological scale at the dinner-party whom Wilberforce met at the Duke of Queensbury's Richmond Villa. "The party was small and very select: Pitt, Lord and Lady Chatham, the Duchess of Gordon, and George Selwyn. The dinner was sumptuous, the views from the villa quite enchanting, and the Thames in all its glory; but the Duke looked on with indifference. 'What is there,' he said, 'to make so much of in the Thames? I am quite weary of it; there it goes, flow, flow, flow, always the same.'"

Poor duke! He and his villa have both passed away long since, and the Thames goes on "flow, flow, flow," all the same. Strawberry Hill and Streatham come next to each other in the alphabetical arrangement, but are connected especially with two men as widely different as any two could be—Horace Walpole and Samuel Johnson; but while Strawberry Hill still witnesses entertainments that would have excited the envy even of Walpole,—entertainments which are said to regulate the whole Liberal party,—the place of Streatham Place knows it no more. Sydenham is almost entirely modern, with no reminiscence except as the place of abode of Thomas Campbell, where Sir Charles Bell once went down to see him, and they walked in the forest by moonlight, and then adjourned to an inn, where "Tom got glorious in pleasing gradation," and was got home again about breakfast-time, neither a sadder nor a wiser man. Alack! it was his weakness. We can remember him at a Literary Fund dinner so far elevated above himself that his audience, much as they loved him, would not listen. As to Twickenham, its memories are endless and pleasant, if sometimes not very dignified, but very fashionable, boasting, in Walpole's words, of "more coaches than there are in half France . . . and very famous people,—Clive and Pritchard, actresses; Scott and Hudson painters; my Lady Suffolk, famous in her time; Mr. H——, the impudent lawyer that Tom Harvey wrote against; Whitehead the poet, and Cambridge the everything." Clive (Johnson's "good creature, who always understands what you say") was robbed, coming home in her carriage to Twickenham, losing, however, as she put it in a note to Garrick, "only a little silver and my senses." And then there were the Miss Berrys; and there was *Spite Hall*, the next house to Pope's, so called because its owner, the Honourable Geo. Shipley, planned it especially to shut out the view of the Thames from his opposite neighbour. And of the Pope domains it is needless to speak; but a reminiscence which touches a higher chord than the elegant raillery of Pope and Walpole is that of Bacon, who formerly had Twickenham Park as a river-side retreat, and in some MS. directions respecting the project for a corporation for exploring deserted mineral works, says,—"Let Twit'nam Park, which I sold in my younger days, be purchased, if possible, for a residence for such deserving persons to study in, since I experimentally found the situation of that place much convenient for the trial of my philosophical conclusions"; a philosophy different at least from Pope's and Walpole's epicureanism. How poo

Peter Cunningham, who commenced this or a similar work for Mr. Murray, soon after finishing his famous Handbook of London, would have revelled amongst the men and women of these parts, and what a wealth of curious reading would he have brought to bear on the illustration of them and their times.

There are occasional lapses in regard to typographical correction which may be amended in a future edition; we noted on the same page (528), "Vouissoirs" and "proportian"; and "*matrem*" should be "*matrum*" in Pope's inscription to the memory of his mother (p. 635). The biographer of Handel, referred to in the account of Stanmore (the residence of the "Harmonious Blacksmith"), is not named "Schalcher," but "Schœlcher"; and "Mr. M. D. Wyatt" (p. 676), has been "Sir Digby Wyatt" for a good many years past. In general, however, the finish of the book is very creditable. For convenience of carrying, it is divided into two volumes, but the paging of the two is continuous. The author shows sometimes a little too much of the archæologist's contempt for modern architecture, as in his remarks upon the modern Town-hall at Bromley, in Kent, which is a very good building, creditable to the taste of its architect, and with nothing vulgar or obtrusive about it. In his explorations, the author seems to have met with gratuitous assistance sometimes from brother archæologists, as when the sexton at Barking inquired whether he had been to "the battle-field by Uphall," and in further explanation added that it was the scene of "the last battle, when Oliver Cromwell drav the Romans out of England." Those who read Mr. Thorne's book need not fear any such misleading: it supplies a long-felt want, and will be welcomed.

"THE TROCADERO."

Of the many thousand strangers who visited or passed through Paris during the months of August or September last, how small a number had ever heard of the Trocadero. Its green slopes were too far from the boulevards to attract the busy pleasure-seeker or the idle man of business, and beyond its known propinquity to the Champ de Mars, it was almost a *terra incognita* to the ordinary tourist.

The Trocadero, it is true, is on a direct road through Chaillot to Passy, whose artistic and literary inhabitants can tell you many a tale of the very different neighbourhood they had to pass through thirty years ago, on their way home from Paris at night to their favourite suburb. The Trocadero (called, until 1823, after which date it was laid out as a public garden, the Montagne de Chaillot) obtained its name from the fact, that after the taking of the Fort of the Trocadero by the Duc d'Angoulême, in the Spanish campaign of 1823, a mimic representation of the scene was arranged for the Parisian public, in which the heights opposite the Champs de Mars represented the famous fort of the Trocadero, stormed by the gallant French, under the command of the duke in person.*

Until 1790, when it was suppressed by the Revolutionists, a convent (of the Visitation de Sainte Marie) existed here, founded by Henrietta, the queen of Charles I., who, as everybody knows, retired to France after the execution of her husband in 1649. On the site of this convent, early at the beginning of this century, Napoleon planned and elaborated, with more than usual care, a palace that was to exceed in grandeur the Versailles of Louis XIV., the vast Escurial, the massive Pitti, the Bourbon Palazzo Reale in Naples, the Palazzo de Te in Mantua,—a palace, in fact, that was to realise Napoleon's conception of a residence worthy of a monarch of the world. The surroundings of the buildings would have included the whole of the Bois de Boulogne, with its artificial lakes and race-courses. This grand scheme, however, collapsed with the military disasters of the first Emperor.

The visitors to the Exhibition of 1867 will well remember the pleasant green slopes of the Trocadero, on the right-hand side of the river; indeed, it has long been a pet conception of the Great Exhibition projectors of Paris that this magnificent site should form a prominent feature of any new enterprise, and the commissioners for 1878 have paid their first attention to the Trocadero.

From time to time, within the last five months, we have given some account of the progress of the Exhibition, and we are now about to describe its condition up to the present date.

Not only have the foundations of the Palace of the Trocadero been firmly laid, but enormous underground works have been built to support the weight of the central hall. This rotunda presents great difficulties in its construction. The under-soil contains vast quarries, which are no more used, and which have not been for a long time; innumerable discharges of artillery at the fêtes of former days, the thousands of mines sprung in 1811,* and again in 1867, the creation of public thoroughfares, have disturbed the thick strata of earth, sand, and other matters between the surface and the quarries beneath.

To form any idea of these works, one must visit them. By an opening cut in the southern slope of the mountain, one penetrates to the galleries, which were only cut some months ago, for these new galleries must not be confounded with the ancient quarries of Chaillot, which have been abandoned for centuries. But before commencing this work, exploring wells had been pierced, and it was found that in many places the rocks were full of great gaping cracks, so that to make any advance through these disjointed blocks was a very difficult and dangerous matter. By dint of carefully shoring up the galleries as they advanced, the workmen have succeeded admirably in their dangerous task.

In order to support the enormous weight of the future palace, they are at present constructing, under ground, two arches of a strength that will resist all proof. The piers of the first will be about 15 ft. thick, and those of the second about 10 ft. These two arches, some 15 ft. asunder, will be united by brickwork. In addition, to resist the enormous pressure of the earth of the Palace du Trocadero, a little to the north of the above-mentioned arches will be constructed four masses of some 100 ft. circumference. To form some idea of the necessary labour, there will be no less than 10,000 cubic mètres of masonry buried in the vast underground works.

Upon these great arches a central hall is to rise, which promises to be externally more wonderful than it is likely to be beautiful; its regularity and manipulation of parts detracting, as in so much modern construction, from the varied outline in mass and detail so characteristic of the great works of the past. The architect too often becomes the slave of the contractor: he has to consider not what he can design well, but what the contractor can supply quickly, and the skill and the calculation of the engineer take the place of the artistic thought, and the just consideration of the strength of materials leaves little room for picturesque design.

Critics will be sure to condemn the external appearance of the Palace of the Trocadero. Rome was not built in a year. But what the Palace externally may be deficient in will be amply made up for by the contents,—the "*Histoire de Travail*" that is to decorate and illuminate its interior, and which is now occupying the labour and devoted attention of so many distinguished and learned Frenchmen, who will gather the treasures from their own possessions, and from the greatest collections in Europe.

Mr. Cunliffe Owen will find it exceedingly difficult to compete in interest with the History of Labour on the Trocadero. But we may be certain that the beautiful and the precious on his side of the river will not be neglected, and we may rest assured that the useful and the manufactured are well able to take care of themselves.

Up to the 15th of January more than 7,000 Parisians alone had applied for space to exhibit, and already more room than in 1867 has been granted to the eighty-three departments of France. Every nation in the world, with two exceptions,—Germany and Morocco,—has stated its intention to exhibit. China, that was absent in 1867, will be here in great magnificence; and the hard-worked commissioners of the Paris Exhibition are already apprehensive that the space allotted to foreigners will be insufficient.

Within the last few days the official list of the English commissioners has reached Paris. It has been noted here that, notwithstanding the distinguished names enumerated in the Commission, there are striking omissions. Neither architecture, sculpture, nor music appears represented, and surely the Lord Mayor of London would have found sympathetic aid, by the addition of the mayors of many of our great English corporations, and also he would have worked in the true spirit of friendship it is to be hoped, with the masters of our ancient London guilds, had they been added to the Commission.

The omission of the president of the Royal Institute of British Architects is, we hope, accidental, and there are great names connected with the building interests that we find absent. Might not the Educational Boards have found useful work to do here, as the French authorities intend to make a great point of the Department of Public Instruction? So minutely are the French commissions for the exhibition classified, that the names alone of their members would occupy almost one entire number of this periodical.

Mr. Cunliffe Owen, who arrived here a short time ago, has been received and warmly welcomed by M. Krantz. Mr. Owen has given the commissioner-general the most satisfactory assurances of the dispositions of the English exhibitors, adding that the Prince of Wales, in accepting the presidency of the English commission, intended to take into his own hands the practical direction of the participation of England at the Exhibition.

Mr. Cunliffe Owen, who is well known here in Paris, is a great favourite. Those who worked by his side in the Exhibitions of 1855 and 1867 remember well his enthusiasm and his extraordinary ability. In our own Exhibition in 1862, and in that at Vienna in 1873, to say nothing of that at Philadelphia last year, Mr. Owen's ability has been fully recognised, and there seems every promise that his wide knowledge and profound acquaintance with the treasures of the past will secure to the English section of the Paris Exhibition a show the magnificence of which the world has not yet seen.

Why should not Mr. Owen exhibit to the Parisians in one or two well-proportioned rooms, say 100 portraits by Sir Joshua Reynolds, together with an equal number of Gainsboroughs? What a sight would this be for a country that has had no portrait-painter to compare with either of the two great Englishmen. What a list of famous names would the 200 portraits comprise. What histories, what virtues, what worth! Why should not *two or three hundred* Sir Joshuas be obtained? There were many more, surely, some years ago at South Kensington; but they were badly seen, and not too well selected.

Another room might contain a dozen Gainsborough landscapes, a dozen Chromes, a dozen Constables, a dozen Cottmans, two or three De Wints, a hundred David Coxes, a few Mullers, a Nasmyth, and some fifty Turners. Such an exhibition as this would have but one fault,—that it would overwhelm the Parisians with so large a debt of artistic gratitude to England that it would be almost discourteous to place our friendly neighbour in so embarrassing a position.

Paris.

THE LECTURER AT THE INSTITUTE ON MONDAY NIGHT.

It is thirty years since Mr. Penrose, who had then been engaged, as Travelling Bachelor of the University of Cambridge, in investigating some of the remains of Athenian architecture, wrote to the British Museum authorities, stating his opinion that Greek architecture was characterised by remarkable refinements of detail, affording evidence of great mathematical knowledge, which had hitherto been unnoticed and apparently unsuspected, and offered to undertake almost the whole expense and labour of a six months' investigation of them, provided he went out "armed with their sanction and authority." The purpose was considered to be foreign to the objects for which the British Museum was instituted, but the Society of Dilettanti took up the matter, though it was not till fifteen years later that they published the beautiful book in which the results of Mr. Penrose's exceptionally careful and accurate investigations were embodied and illustrated.

The surveyor to the Dean and Chapter of St. Paul's has taken a very quiet and unobtrusive part in the practice of his profession since then; and so little, unfortunately, has Athenian architecture been studied and thought of during recent years, that probably not a few of the younger members of the profession who were present at the Institute meeting on Monday evening last learned then for the first time the real nature and scope of the investigations upon which the lecturer's reputation as an authority

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* Many of our readers will remember Delaroche's picture of "The Taking of the Trocadero," which, painted in 1827, gained for him the cross of the Legion of Honour, and is now hanging in the well-known galleries of Versailles.

* For the foundations of the Palais du Roi de Rome referred to above.

upon Greek architecture was based. The surprise which was evidently felt by many at the minuteness of the measurements and figures brought forward, is in itself an indication that this was so; for no one who had studied Mr. Penrose's book would have been unprepared for this.

It may be fitting, then, both as an act of justice to the author of the work in question, and also as a hint to the rising generation of architects, to take this opportunity of recalling to the attention of the younger race of architectural students, one of the most valuable and thoroughly worked out architectural treatises which is in existence in our language: the rather because such a subject cannot possibly be really appreciated and entered into by listening to a single lecture, and we more than suspect that some of Mr. Penrose's audience, who seemed disposed to regard his views in a very questioning and sceptical spirit, had not the slightest adequate idea of the amount of work, the delicacy and carefulness of the investigations, upon which his opinions, a large proportion at least of which must be spoken of as proven facts, are based.

The large and beautifully-illustrated volume on the "Principles of Athenian Architecture" supplies the fullest information on this head, and ought to be studied carefully by any who, not having already studied it, wish to arrive at a clear understanding of the arguments upon which Mr. Penrose's statements as to the optical refinements of Greek architecture are based. The investigation was one requiring the most exact instruments, and the most minute care in making and checking measurements to a hair's breadth; and demanding also full and sound mathematical knowledge, without which the measuring of such delicate matters as the curves of the columnar entasis, and the appreciation of their real character, would have been impossible. Some idea, both of the perfection of Greek workmanship and the carefulness of Mr. Penrose's measurements, might be gathered from his single remark in the course of the lecture, that the actual line of the entasis curve of the columns did not anywhere differ from the theoretic hyperbolic curve which it represented, by more than the thickness of a piece of blotting-paper. A reference to the volume, however, will show that this is only one among a number of examples of equally painstaking investigation, and equally minute workmanship. The Parthenon seems literally to have been made and put together in the way Stephenson said a locomotive-engine should be made, "as carefully as a watch." The jointing is such that the joints are often nearly invisible, even after the wear and tear of so many centuries; and this perfection of fitting, which was, of course, partly helped by the nature of the material in which the architects worked, afforded also the opportunity of forming conclusions as to the original character of the curves measured, and the proof that they were the result of no accidental disturbance of the structure, by observations upon the state of the joints in different portions of the structure, the deductions from which, as given in Mr. Penrose's book, afford in some cases remarkable examples of acute logical reasoning. Young architects should go carefully through this book both as a most interesting study, and as a work without which Greek architecture cannot be thoroughly comprehended; while the illustrations, with their minute figuring and careful execution, are examples of a style of scientific architectural illustration not often met with in these days of "sketches."

Mr. Penrose has chosen, apparently, to rest his reputation upon this publication, and has not cared to compete for the more brilliant success which some of his contemporaries enjoy, and which would seem to have been equally within his reach had he tried for it. It is, perhaps, owing to this that, except by the honourable and responsible official position which he holds, his title to rank high in his profession is less known to some of his younger brethren than it should be. His book still, as far as we know, stands alone in relation to the subject it illustrates. A question was asked at the meeting as to whether any work on the topic had been published in Germany; it appears not. We should say that all the Germans require is to translate Mr. Penrose's book. Some sadly inferior architectectural works have been translated into our language from the German; it would be gratifying if the compliment of translation were returned in the shape of a work which will always be so highly creditable to English architectural investigation.

ART IN HOSPITALS.

READERS of the *Builder* from the beginning must often be amused by seeing the way in which things long ago therein suggested and urged are again brought to the front by rising individuals with all the airs of discoverers or originators. Long ago we spoke of the desirability of changing the bald and uninteresting appearance generally presented by the interior of hospitals, and on more than one occasion the Art-Union of London sent, as the practical outcome of such teaching, impressions of their engravings to enliven walls previously bare. Dr. J. Lawrence Hamilton (of 34, Gloucester-terrace, Hyde Park) now writes to us, as to others, suggesting that a fund should be raised to remedy the present state of things, and to render hospitals more inviting and cheerful. He offers 100*l.* towards this himself, on condition that 1,000 other donors will subscribe each an equal or a larger sum by the 1st of May next. We should be sorry to say anything harsh of Dr. Hamilton, but the offer is an absurdity. We would insure him for 2*s.* 6*d.* against being called on for his 100*l.* His idea as to the use to be made of the money is expressed thus:—"I advocate the brightening of the wards and the cheering of their inmates by the addition of suitable pictures, plate bronzes, carvings, *bric-à-brac*, old armour, china, sculpture, ornamental clocks, fancy glass, tasteful glazed tiles, and other art decorations of all sorts." This is much too omnivorous, and Dr. Hamilton might be likely to get more if he proposed less. *Bric-à-brac* has already too free a development in our dwelling-houses, without finding a fresh field for it in hospitals; and in a general way it may be questioned whether it would be suitable to go too far in filling the wards of hospitals, which should certainly have a predominant appearance of repose, with such a heterogeneous collection as Dr. Hamilton's list might be taken to furnish excuse for. We have heard gentlemen who did not share their wives' taste for *bric-à-brac* lament over the way in which their houses were lumbered with it; and if the class of persons who are troubled thus were thrown on hospital care, we can imagine their sigh of resignation,—"What, *here* too?"—when they found their hospital ward filled with the china and Japanese screens they had left at home. On the other hand, it may be observed that those who do avail themselves of hospital care are usually persons not accustomed to ornamental furniture of this sort, and who would not, therefore, feel the want of it, and perhaps hardly appreciate it. Our doubt, however, is only in regard to the manner in which the proposition is worded. That sick-wards usually are very dreary-looking places is undeniable; and we cannot but think that money spent in suitably decorating them, and in providing, not *bric-à-brac*, but works of art such as would be likely to interest and appeal to the sympathies of the patients, would be most admirably laid out. A good deal of taste and judgment would be needed to do it suitably; and it should not be forgotten that in time of illness objects of an unusual or puzzling character to the eye, even such a thing as an involved or intricate wall-paper, are often most disturbing and fidgeting to the patient. With these reservations, we say, as we have said before, that something of the kind that is suggested is desirable, and that the need of something to give more cheerfulness to hospitals is evident. Gifts of flowers are constantly and systematically made to some hospitals in London and elsewhere (there exist little charitable conventions of ladies to carry out this kind of aid), and nothing could be more suitable than flowers as far as they go; but they are not everything, nor can they, of course, be equally well procured at all seasons of the year. Dr. Hamilton invites intending donors, contributors, and subscribers, to communicate with him, and we gladly take this opportunity of giving further currency to his proposal; but if he wish to be thought in earnest, and to bring about the good desired, he must alter the terms of it very materially.*

The Albert Institute of Fine Arts, Edinburgh.—It has been resolved, on the recommendation of the Council, that the first exhibition of this Institute be held in the month of May next, the architect having certified that the Albert galleries will be completed in that time.

* Since this was in type the proposal has been modified.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the ordinary general meeting of this Institute held on Monday last, the 5th inst., Mr. J. Whichcord, vice-president, in the chair, it was announced that, subject to the approval of the special general meeting to be held on the 5th proximo, and to her Majesty's gracious sanction, the Council recommend that the royal gold medal for the current year should be awarded to Mr. Charles Barry, president of the Institute.

Mr. T. Roger Smith brought before the notice of the meeting the death of Mr. William Young (already referred to in the *Builder**). He said Mr. Young was educated in Manchester, and in his early years of practice executed several works of considerable merit. He was afterwards in partnership with Mr. Pownall, but was, perhaps, better known as one of the fortunate "winners" in the great cavalry barracks competition, having carried off the third premium. He was one of the founders of the Architectural Association, and in many other ways had been of great service to his professional brethren. Of late years he had been employed as chief assistant in several first-class offices. He died in Bradford, Yorkshire, in circumstances of great poverty, leaving a widow and several children. It was much to be lamented that a man so highly-endowed in many respects, and who had won the affections as well as the esteem of all with whom he came in contact, should have been unable to make provision for his family. The Architects' Benevolent Society had had the case under consideration, and had made, perhaps, the largest grant it had ever made in aid of any one case. But it was greatly to be regretted that the society was not supported with sufficient liberality to enable it to render more than a very moderate amount of help.

The drawings made by Mr. E. J. May, Pugin Travelling Student for 1876, were exhibited, and it was announced that the Council had awarded Mr. May the sum of 40*l.*, to which he was entitled on the completion of the drawings.

Mr. C. F. Hayward asked whether the Council had taken any action with reference to the omission† of the name of the President of the Institute from the list of British Commissioners for the Paris Exhibition of 1878? The presidents of various learned societies had been nominated as Commissioners, but amongst them he failed to find the name of the President of the Institute.

Mr. Eastlake replied that the Council had not taken any action in the matter, for the reason that the President had himself taken the matter in hand, and had made a private communication to the proper quarter. As yet no reply had been received.

Professor Donaldson said that when it was considered that in the art sections of previous Exhibitions, both at home and abroad, the architectural galleries had formed most important parts of the displays, the omission to name the President of the Institute as one of the Commissioners was the more noteworthy, and it looked very much like an intentional slight to the profession.

Mr. Horace Jones said that in this matter the Government was merely following out the habit of many years past in studiously ignoring the architectural profession. They (the members of the Institute) were ignored in '51 and again in '62, and unless some very strong, prompt, and decided action were taken, they would again be ignored. The systematic way in which it was sought to ignore the architectural profession was also seen in the fact that in '62 some kind of commission was issued to make inquiries as to the strength of materials, but no architect was included amongst the commissioners. He suggested that it would be desirable for a deputation from the Institute to wait upon the President of the Board of Trade (or whoever might be the proper authority) with reference to the matter.

The Chairman thought it would be best to leave the matter in the hands of the President, whose name was a tower of strength. The subject then dropped.

A letter was read from Mr. Edmund Sharpe expressing his wish to meet with two young architects, in their pupilage or just out of it, accustomed to make measured drawings from buildings, to accompany him to Florence, with a view to the study and measurement of the churches of Pisa, Pistoja, and Lucca. We

* See pp. 72, 119, *ante*.

† Pointed out in the *Builder*, p. 97, *ante*.

understand that Mr. Sharpe has already obtained the necessary assistance.

Mr. F. C. Penrose then read a paper "On the Optical Refinements of Greek Architecture," of which we give below an abstract.

ON THE OPTICAL REFINEMENTS OF GREEK ARCHITECTURE.

THE author commenced by devoting some remarks to the consideration of the complete system of proportions used by the Greeks. He observed that in the complication of modern wants there was much to hamper the architect, and much to excuse him for neglecting to attend to proportion; but it was therefore the more desirable to call attention to the subject. The careful adjustment of proportion alone would not make good architecture, but it was not too much to say that really good architecture could not be achieved without it. Although the Greeks paid more attention to proportion, probably, than any other people, it was not wanting in the best Mediæval structures. The late Professor Cockerell called attention to the accurate proportions of Milan Cathedral, and the author had found enough evidence of careful adjustment of proportion in Lincoln Cathedral to enable him to read a paper before the Archæological Society when it met there. It was in the Greek temples and monuments that proportion was most completely and systematically applied. The Parthenon had the double advantage of having been built at the very climax of Greek civilisation, and of having been adequately preserved to the present time, so as to enable accurate measurements to be taken of it. He thought the scheme of proportion used in its composition had been discovered, viz., that which was announced in a paper read before the Institute on June 13, 1859, by Mr. Watkiss Lloyd. That scheme had the advantage of supplying a rule applicable to any important design whatever. It appeared in a greater or less degree in all the temples of Greece and Asia Minor, and was perfectly available, *mutatis mutandis*, with Gothic designs. Practical architects would not need to be told, however, that there was a quality of more importance than any scheme of proportion, viz., that of getting the building properly adjusted to its purpose and character, which must be done simultaneously with attention to numerical proportion. But there need not be in Mr. Watkiss Lloyd's scheme the slightest hindrance to the common-sense or artistic qualities of the building, for it would have a steadying and regulating influence on the design. That many or most of the architectural works of the present day would be improved by less ornament and more studied harmony of proportion was certain. The buildings erected by Inigo Jones and Sir Christopher Wren might, at any rate, be appealed to in support of this thesis; and the author had little doubt that had Wren known the Parthenon scheme he would have used it in St. Paul's. That he did work in regulated proportion there was sufficient proof; but in the present paper the author's object was not with Wren, but with Ictinus, Mnesicles, and Callicrates. These architects, engaged on the works erected under Pericles at Athens, having settled the general scope and mass of their buildings, found, apparently already recognised, the scheme of proportion which they used. Mr. Lloyd's discovery was this:—A leading proportion having been chosen for the principal components of the temple,—viz., the length of the upper step measured on the front and on the flank,—which has in the Parthenon the ratio of 4 to 9,—the favourite enstyle arrangement transmitted by Vitruvius. We could perceive that this ratio deserved the commendations paid to it by its name, *i.e.*, when used for an intercolumniation, being both sufficiently complex and low-termed, and also the duplicate ratio of still lower numbers, 2 : 3. The rest follows by making a series in which in every form the enumerator and the denominator differed by the same number as they did in 4 to 9. Thus $\frac{1}{2}$ was the beginning of the series, and it certainly extended as far as $\frac{14}{19}$. There were certain favourite terms, and some, perhaps were altogether unused; but it was quite exceptional to find any proportion between contiguous features outside that scale. To these ratios Mr. Lloyd's scheme allowed in addition, for a few terms, those in which the numerator and denominator differed by unity: such as 5 : 6, 6 : 7, 7 : 8, 9 : 10. The temple was then planned upon certain definite considerations. Above all things it was to be the hecatompedon, or the hundred-foot. There was reason to believe that the cella of the temple of Minerva, destroyed by the Persians, was 100 ft. long, and that temple also bore the name of hecatompedon; but the new temple was made 100 ft. broad on its upper step. To prove that it was so, reference could be made to the comparative length of the standard measure of Greece compared with those of Rome and Egypt, and such comparison made it certain that the breadth of the Parthenon on the upper step was accurately 100 Greek feet. Mr. Penrose entered at great length into the application of Mr. Watkiss Lloyd's scheme to the Parthenon, and showed how almost exactly the proportions came out. Such slight differences as were found seemed to be of small importance, but in Mr. Penrose's opinion they showed that the Greek architects did not allow their rules to override them, but found some plan to save both their designs and their rules when difficulties presented themselves. The general mass of the temple and the ambulatories having been settled, it became of primary importance to obtain the diameter of the column, which was probably done in this way:—Firstly, the block size of the angle columns was settled by making the abacus one-fifth the height of the column,—a proportion which ruled exactly. Then, deducting one such abacus from the upper step and dividing the remainder on the consideration that the angle columniations [by which Mr. Penrose said he meant the distance between the columns from centre to centre] should be to the central as 6 to 7, and further, that the "distribution" of the columns, as Vitruvius called it, should be enstyle (*i.e.*, in the characteristic proportion several times mentioned, of 4 to 9), we obtained for the diameter of the column 6·2541, or if the column obtained by calculation were used, then 6·2511. The measurements of the mean of the whole temple gave 6·2495. The difference was quite insignificant. There was, indeed, a nearer and more ordinary suggestion, viz., that it was made just 6 Attic feet and 2 in., measuring 6·2496 feet English. But, in Mr. Penrose's opinion, this curious equality must be a coincidence, especially when it was remembered that the Greeks divided their foot into dactyls, or sixteenths, and not into inches. The Romans used both. The Greek word for inch, *δωδεκατημόριονα*, might, he thought, be quoted in favour of his argument. Another very curious proportion, and one analogous to the Parthenon system, was found in the diameter of the columns, viz.:—Forty-six columns form the peristyle, and forty-six times the square of the diameter, formed an area which had the proportion of seven to ninety of the whole surface of the temple, absolutely,—in other words, the lineal error was less than the six-thousandth part of the diameter. It was not to be supposed, however, because a great number of exact, or almost exact, relations of proportion existed in the Parthenon, that such proportions were as common as blackberries, and would come as a matter of course. Much of the merit of the Parthenon resulted from the designers having exercised a discriminating judgment in combining so many near approximations in addition to their exact proportions. It had become a recognised principle among the Greek architects that certain modifications upon the proportions as first settled had to be made for optical considerations. The horizontal lines had all to be curved vertically, so as to make them convex. This applied to steps and entablatures, to fronts and flanks, the angles of the temple, and the central apex alone retaining the levels first designed for them. The columns at the angles were reduced by this treatment from 34·424 English feet to 34·253 (or 34·484 calculated), and with it the exactness of the duplicate ratio of seven to twelve, which had been designed for them, passed away. The great stylobate was superimposed upon a sort of narrow plinth, about 10 in. high, which sometimes served the purpose of adjusting the levels of the pavement. Taking it at its height at the east front, it gave to the total height of the temple, compared with the base (including the spread of that particular plinth), a proportion forming one of Mr. Lloyd's analogies, viz., that of nine to fourteen. The whole mass of solids bore to the height of the finished column a proportion of nine to ten, and the total height given to the steps, including this plinth, together with the entablature on the flanks, bore to the height of the column the proportion of one to two. The sensitive eyes of the Greek artists were the first to perceive that the contrast of lines having different degrees of inclination, and of surfaces having different degrees of illumination, tended to make straight lines look distorted, and equal quantities to appear unequal; and they discovered means of exactly counter-balancing the unsatisfactory effects of the sight "missing its way," as their writers described it. The three principal instances in which these refinements are found are (*a*), in the curvature of the horizontal lines of a building; (*b*) in the inclination of the columns and walls away from the true perpendicular; and (*c*) in the entasis of the columns. The first-mentioned was discovered in Greek buildings about forty years ago by Mr. John Pennethorne, the brother of a recent Gold Medallist of the Institute. This discovery at once explained a passage in Vitruvius which had puzzled the grammarians, and helped to show why the Greek buildings of the best period had such an unusual charm. The cause seemed to lie in the uncomfortable effect produced on the horizontal cornice by the raking lines of the pediment. To this cause Mr. Penrose attributed it in a paper read before the Institute thirty-one years ago, and he had seen no argument which equally well explained it. A paper appeared in M. César Daly's *Revue Général* in 1875, vol. xxxii., by M. Emile Burnouf, explaining the matter on analogous principles very satisfactorily. After describing the diagrams with which his paper was illustrated, Mr. Penrose went on to say that in every case but one where curvature was applied to the entablature, the step below was parallel, or nearly so. Indeed, the curvature in the step in the Parthenon was greater than that of the entablature, but in the Propylæa at Athens the step was cut in two by the roadway, so that a parallel curve on the stylobate would have no value; in their case the middle columns were made taller than the angle columns. The plan of giving a curvature to the horizontal lines was a very ancient one, but it did not, Mr. Penrose thought there was reason to feel sure, come in until the want of it had been experienced, and then at the very point where the want was felt. The fronts at Pæstum (Temple of Neptune), a very early example, showed the curvature, but not the flanks. The Temple of Jupiter, at Ægina (earlier, probably, than the Theseium), showed it on both; so did the Theseium; and, later than the Parthenon (although the Sicilian architects did not appear to have applied all the Athenian refinements), the curvature was found both on the fronts and flanks at Segeste. The amount by which the horizontal lines were lifted was greater in the front than on the flanks, still pointing out the constraining reason. In the Parthenon it was ·228 on the step, and ·171 on the entablature, or about 1-450th and 1-600th respectively. On the flanks it was ·340 and ·306, or about 1-700th and 1-750th respectively. Proceeding next to speak of the inclination of the columns, Mr. Penrose said this peculiarity in Greek architecture was first pointed out by Professor Donaldson. It applied not only to the peristyle, but to the cella-walls. Mr. Penrose said it appeared to him invariably, in looking at a colonnade in front of a building built with perpendicular columns, the upper parts seemed to spread. He attributed this to the enhanced value of the light on the upper parts of the column, by reason of the strong shade on which they were thrown out, as compared with the light on the lower parts, where, even if the background were in shade, it was modified by reflected lights. This enhanced value of the light introduced the well-known optical principle of irradiation, and caused the upper parts relatively to expand.

A discussion followed, in which Professor Donaldson, Mr. Watkiss Lloyd, Mr. James Fergusson, F.R.S., and Mr. R. P. Pullan took part. We shall give a report in our next.

Industrial Dwellings at Newcastle-upon-Tyne.—At a meeting of the Newcastle-upon-Tyne Improved Industrial Dwellings Company (Limited), on the 3rd inst., it was agreed to invite tenders for a considerable extension of their present buildings, preparatory to the plans being submitted to the shareholders. The approved plans embrace several improvements suggested by the experience gained in the working of the present block and the teachings of sanitary science, whilst at the same time facilities for the mental improvement and recreation of the tenants will not be forgotten, as one feature will be the provision of a large room, intended to comprise all the attractions of a publichouse, without the drink.

AUTOMATA FOR SPORTING PURPOSES.

THE MECHANICAL HARE.

SOME of our readers may remember a series of illustrations which appeared in *Punch* nearly a year ago, entitled "Mechanics in Sport." The series included a "steam plough express travelling-chair for lazy shots"; a "steam ejector and spinning apparatus for jack and chub fishing"; an "improved clockwork hunter, with patent camb-saddle bumping action"; and a "pneumatic-despatch fox." To this list we have to add the "mechanical hare," in the contrivance of which a great deal of ingenuity has been expended by Mr. C. Kingsford, C.E., who read a paper on the subject at a meeting of the Civil and Mechanical Engineers' Society on the 1st inst. Mr. Kingsford, we understand, is not the inventor, although he is the contriver of the apparatus. The inventor furnished all the essential points which characterised the invention, and appointed Mr. Kingsford engineer to carry out the idea to a practical result. He required that an artificial hare should be made to travel along the ground at any required pace. That it should start and get up a sufficient speed to keep in front of dogs slipped to it, as is customary in coursing the real animal (usually about forty yards start is allowed the hare before the dogs are slipped); that it should be in the power of the person who controlled the machinery to regulate the speed of the hare so that the dogs should not catch it before it ran to cover, and at the same time that it should not so much exceed the speed of the greyhounds as to cause the dogs to get unsighted before reaching the winning-post; that the hare should run about a quarter of a mile and then go into cover; and that it should so naturally resemble the living animal as to be eagerly pursued by greyhounds. All these instructions necessitated a considerable amount of thought to enable the engineer to comply with them, and having no precedent to refer to he determined to make some preliminary experiments. There is an oft-repeated wager that a man shall not move a pound weight at the end of a string half a mile long laid on a level turnpike road, and that he may choose his own string. No man can do it; for if the string is light it breaks, and, if thick, it is beyond the strength of man to overcome the friction. Mr. Kingsford's first idea was to pull the automaton by a copper wire, and in practice no better method has suggested itself, although several ways may be adopted for carrying it out. Copper wire may be wound and unwound on a drum, if not too small, without materially injuring the strength and tenacity of the metal: iron or steel would not stand this usage; the phosphor bronze which has been used may be advantageous under some circumstances, but it has this drawback,—it is less pliable than copper, and when wound on a barrel it retains the impression, and pulls out in an elongated spiral form, which is objectionable. The author having explained the manner of conducting the various experiments said he was recompensed by seeing the greyhounds run the automaton as keenly and with as much eagerness as if it had been a hare in its native pastures. The size wire employed was No. 16 Birmingham wire-gauge, which was fully equal to any legitimate strain that might be put upon it, but would break before any damage could be done to the machinery or apparatus. Having completed these experiments, it was decided to put in practice the lessons learnt, and establish the system on a permanent footing. Arrangements were made with Mr. Warner, of the Welsh Harp, to form a racecourse in one of his fields, and, although it was not all that could be desired, it was the best piece of ground that could be got in that neighbourhood, as it allowed of a quarter of a mile of rail being laid down in a straight line, but the ground was not level, the highest part being in the centre of the course, which was unfavourable for spectators, and it also proved very disadvantageous from the fact that the man who controlled the machinery for winding up the wire was unable to see the starting point, which was hidden by the rising ground. The hill also presents a greater resistance, and requires more power to pull the wire and automaton than it would have done had the course been level; but the choice of this piece of land proved most unfortunate in consequence of the recent rains having flooded a considerable portion of the course, so that it has not been possible to continue the races, which it was proposed should take place monthly.

It was arranged that the following plan should be adopted:—To lay down a tram-rail upon which a runner was fitted to slide, and this runner to carry a stuffed hare, the wire to be attached to the runner and to be wound on to a machine, thus causing the hare to run the course. The rail nearest approaching that which was required was made of channel iron 1¼ in. by 1 in. with a V-groove planed along each side, within the channel (as the engineer could find no section of iron rolled precisely as required, he was obliged to use the nearest he could obtain until he could get iron rolled expressly for the job); this rail was screwed down at the joints to wooden blocks, and the whole sunk flush with the surface of the ground. The reason for adopting so narrow a tram was for fear the dogs might get hurt if it were wide enough for them to get their feet into the channel; but practice has shown that such fear was unfounded, for if the dogs are slipped a little on one side of the track, they rarely, if ever, run on to it, for the receding hare, being about twenty yards ahead of the dogs, always presents an angle to their view, so that in following they do not approach the rail until the end of the course. Practice has shown that a wider rail and a narrower channel on the top may be used for the wire to run in, and instead of an inside groove, which has to be planed out, and which necessitates short bars, and consequently a greater number of joints, it would be far preferable to have a slight flange on each side of the rail to guide the runner and keep it on the track. The section now being adopted is 3 in. wide on the top, with a centre channel ⅛ in. wide by ⅜ in. deep, with rounded edges; no dog's foot can get into this, and there is ample room for the wire. The manner of joining the ends of the bars is to rivet two short studs or tenons ¾ in. by ½ in. into one end of each bar, which may be rolled the usual lengths, and by riveting a plate to the bottom of the other end, two mortises are formed into which the tenons of the next bar fit accurately. The form of the rolled bar admits of this arrangement without much cost for fitting. Rails of this description may very readily be laid down where the ground is level, and as there is no fixing required in the field, they can be as readily removed, and the whole is perfectly portable.

It is rarely that a piece of suitable ground can be found perfectly level to hand. The readiest mode to adopt is to strip the turfs for about half a dozen yards wide, level the ground, and lay down the turf again and roll: a very ordinary piece of land may thus be prepared, and got ready for the rail to be laid, in a few days. The course should be level, or, what is still better, it should cross a slight valley, but in no case should it run over a hill, for the reasons already given. By crossing a valley the lowest ground would be about the centre of the course, this would have many advantages: the spectators, as well as the man at the machine, could see the whole course. The hare, starting down-hill, would attain its maximum speed in less time, and, on arriving at the goal, the rising ground would counteract the increasing speed due to the decreasing quantity of wire to be drawn in, and the speed equalised; and, lastly, the course being across a valley, would simulate to the catenary that the wire would naturally assume, and consequently reduce its pressure on the ground, and take less power to work.

The first form of runner tried was constructed to carry the hare supported directly over it; the hare was fixed on a cradle, which was pivoted in the centre, and supported fore and aft by a spring; this gave the creature a galloping movement as it went along; but, as the centre of gravity was very high, and the rail narrow, the side motion of the hare caused a great deal of friction in the grooves, and induced the engineer to alter the arrangement, and fix the hare to a trailing spring behind the runner. The weight being thus divided between two supports, the friction is considerably reduced, the spring giving a very natural movement to the animal. A winding-machine was constructed on the principle of an ordinary crab, with the motion reversed, the wire being wound on the barrel at the rate of about 20 yards to each turn of the handles. An improvement which Mr. Kingsford introduced into this machine, to enable the men to get a good start, was that instead of the barrel upon which the wire is wound being fixed on its shaft, it is made loose, and a fly-wheel of the same diameter as the outside flange of the barrel is keyed to the shaft in close proximity to the barrel. The men thus start the fly-wheel, and by means of a lever the flange of the barrel is brought into contact with the rim of the fly-wheel, and by the friction of one on the other the barrel is set in motion very quickly; the speed of the barrel may thus be controlled without varying the speed of the motor. The state of the rail materially influences the traction. When the rail is wet and dirty, the resistance is found to be about one-fourth more than when quite dry, but this is not entirely due to the friction of the wire, but is partly owing to the V-guides getting foul, and thus impeding the runner. This cause of extra friction will not exist with the new rail, as it has guides on the outside instead of being confined within the channel. It is the inventor's intention to employ steam-power for any permanent race-course, and Mr. Kingsford proposes to use a small vertical boiler, and one of the high-speed multiple cylinder engines, which can work the barrel at the required velocity without any intermediate gearing. It only remains to explain how the automaton is stopped at the end of the course, for it runs into cover at the rate of thirty-five to forty miles an hour. The engineer devised a very simple kind of brake, which answers the purpose perfectly. He places two pieces of quartering, about five yards long, one on each side of that portion of the rail which terminates in the enclosure at the end of the line; the runner which carries the hare has a spring on each side of it, and on arriving within the enclosure, where it is hidden from the sight of the dogs, it runs between the pieces of quartering (these are laid so as gradually to approach each other), and the progress of the automaton is thus arrested without much shock; by drawing two wedges the side pieces are opened out, and the runner set free ready to be taken back for another course without delay.

In concluding his paper, Mr. Kingsford said that to most people the mechanical hare affords far more amusing sport than any other kind of races, for thirty or more courses can easily be got through in a day, instead of about half a dozen at a horse-race, and often not more at a coursing meeting; and instead of wandering about on a bleak moor (often in most inclement weather), and being misled by the perpetual variations of the direction in which the dogs are running, the spectators will have a full view of the race from the slip to the finish, together with all the comfort of a well-appointed race-ground; and, whereas probably not one person in a hundred understands the abstruse technology appertaining to coursing, every one can appreciate the beautiful machine-like movement of the eager greyhounds striving in their headlong race, in the straighest of lines, to reach the goal. Another and material feature is that the sport can be enjoyed at the pleasantest time of the year for out-door sports, as well as in the autumn and winter. It is also well worthy of the attention of the opponents of sports involving cruelty to animals, as it will afford an innocent recreation and sport to all without the faintest shadow of the reproach of cruelty attaching to it. It is not intended in any way to imitate coursing, but is purely and simply greyhound racing, without whip or spur, or any stimulus other than the natural eagerness of the dogs.

ARCHITECTURAL NOTES, BY AN IGNORAMUS.

THE CATHEDRAL MOVEMENT AT HOME.—CHARTRES, RHEIMS, AND ROUEN.

AT a time when it is well known that some of our greatest and wealthiest cities are anxious to wipe away the reproach of meanness and barrenness which attaches to their public architecture, and when proposals have already been made for the erection of at least three cathedrals or basilical churches,—*ad majorem Dei gloriam*, and for the more worthy celebration of public worship,—it cannot be out of place to direct our attention to some of the noblest examples already reared by the piety of Christian communities. Of all the claims to eminence which France can prefer in arts, arms, and letters, there is none of which Frenchmen of culture and education are more proud than of the building of their cathedrals. And very justly so. Individuals die, families become extinct, races are lost, empires crumble away, nations and states change their outward aspect, until the inquirer hardly knows where to look for them, but the creations of their genius remain transmissible from age to age of the most remote posterity. A cathedral is an epic poem representing in visible shape the manners, industry, and civilisation of the past, and in these venerable works, bequeathed to us

by our forefathers, are embodied their most intimate feelings, their most firm beliefs, the summary, in a word, of their entire life and being.

The question of the style to be adopted for the future remains always open, and we do not wish for a moment to prejudice the decision. No man of sound architectural principles will dispute the merits of the Classical style, as modified by the Italian architects of three hundred years back, even for religious purposes. The openness and simplicity which it imparts to the internal arrangements of a church are a great recommendation with many, but in a basilic or cathedral the disposition of the structural members is the same in principle and plan, whether the Classical or the Gothic style be adopted, as any one may satisfy himself who compares St. Paul's or St. Peter's with York Minster or Westminster Abbey. That any new style can be invented by the utmost stretch of human ingenuity worthy to rank with either of these, we utterly disbelieve. Nor do we speak without the warrant of experience, for the attempt has actually been made. It was a favourite notion with French architects for a brief period after the revolution of 1830 and the accession of Louis Philippe. And what did it produce? Such a wretched abortion as the Church of St. Roche, in the Faubourg St. Honoré, which is merely a poor imitation of the worst style of the Renaissance. New combinations and adaptations of ancient forms and methods there may be, and these varied almost to infinity; but a new architectural style never! And why should this be? Because the number of architectural forms is limited by the nature of things and the laws of the human mind, all being ultimately reducible to three simple mathematical figures,—the circle, of which the arch is a segment, the square, and the triangle, which is half of the square, and of which the cone and the pyramid are modifications.

We shall not conceal the conclusion to which our own inquiries have conducted us, and which has long ago been announced by the verdict of dispassionate students, that in the Gothic style we have the most profound science the art of building can show, joined to a boldness of which antiquity has no examples. An amiable enthusiast of the last generation, who did great things in his day, and whose appeals to public feeling did much to dispel the woful apathy and indifference which had long wrapt the popular mind in slumber,—we mean the elder Pugin,—has justly remarked that nothing can be conceived more majestic than those successions of arches divided by light and elegant clusters of shafts, running up to an amazing height, and then branching over into beautiful intersected ribs, suspending a canopy of stone at an enormous height, of not unfrequently 150 ft. Since Justinian raised the dome of St. Sophia, and Charlemagne the rotunda of Aix-la-Chapelle, and William the Conqueror transported the arches of the Flavian amphitheatre to the great church of his favourite Caen, there has been a continual progress in the application of the unchanging rules of art to the production of new forms of grace and beauty, to which the ruder conceptions and more limited experience of remote antiquity could never reach. Nor is there any reason why this progress should not still continue, or why we should not hope in the present day to emulate, and even surpass, the choicest works of the past.

It is to such models as are to be found in the three towns of which the names appear at the head of this note that we would wish, if possible, to attract the attention of our readers. The annalists of the French cathedrals, Joliment and Chapuy, fondly boast how their favourite structures were reared at a single upcast (*d'un seul jet*) by the zealous piety and artistic enthusiasm of their progenitors. This is certainly true in several remarkable instances, as in the Abbey Church of St. Denis, which some hold to be the earliest production of the Pointed Style in France (the date of consecration is 1144), and which still charms us with its resplendent array of painted windows, depicting to the life the scenes of the First Crusade, and in Amiens, the queen of French cathedrals, which was raised to inclose the shrine of St. John. But it was not true in two of the three cases above referred to, which rather resemble, in their slowness of growth and protracted term of development, the religious edifices of our own land. Amongst First Pointed churches, none can dispute the pre-eminence of Chartres; nor amongst Second Pointed that of Rheims. The building of the former is said to have occupied a period of 120 years,—from 1140 to 1260; in which latter it was dedicated by Peter de Maincy, seventy-sixth bishop of the see; and we learn from a curious letter of Fulbert, archbishop of Rouen, to Thierry, bishop of Amiens, written in 1145, that men of all ranks and professions worked at the most laborious tasks, dragging cars, transporting materials, and the like, to forward the progress of the structure. Its dimensions are 424ft. inside in length, 110ft. in breadth, and 113 ft. in height, from the floor to the top of the vault. Excellent judges have pronounced the leading characteristics of the interior to be neither extreme elevation, lightness, nor elegance; but skill and grace in the whole effect, the outlines being neither too slender nor too heavy. We must add, however, of our own motion, and to evince our impartiality of judgment, that the stonework is not remarkable for its finish, and is rather distinguished by a certain coarseness, either in the grain of the stone or its dressing, which detracts from the beauty of both the exterior and interior. Both at Tours and at Lincoln the same defect is very noticeable. Its grand ranges of windows, twenty-six in each aisle, each of them displaying in the chevet or head a sun, rose, or Catherine-wheel, and decked out with the mystical glories of the pentagram and the pentalpha, have a proverbial celebrity. The west front presents a simple arrangement of three portals finely recessed, surmounted by three lancet windows, and in the upper division a grand sun-window, as it may be termed, since it has neither wheel-spokes nor flowing tracery. It consists of a large circle inclosing twelve six-foiled circlets, the central compartment being formed by an eight-foiled circlet, from which radiate twelve foliated lobes, each inclosing one major and one minor quatrefoil. The whole window is inclosed in a square defined by cylindrical shafting on the wall-face, and above the round is a niched gallery with sixteen figures of saints, surmounted by a statue in a central niche, occupying the summit angle of the frontal. The towers are well defined by bold projections of the counterforts, their surface covered by two panelled arches in each story, but the effect rather injures the unity of the whole façade. The length across the transepts is not less than 206 ft. The rose-window of the south transept is the grandest in the edifice, the centre being a twelve-foiled circle, with a radiation of twelve trefoiled fronds, touching on twelve cinque-foiled circles, each resting on a semicircle, of which the base points join the outer rim of the rose. The window is thus made up of simple elements combined into a stellary radiation of exquisite beauty, and is probably rivalled only by one other in the whole series of rose-windows throughout the basilics of France. In the interior the piers of the nave are (like those in the quire of Westminster) massive cylinders, each with four engaged shafts round or octagonal, and with richly-sculptured capitals. The triforium is a simple arrangement of four pointed arches, on round shafts and without hoods, in each bay. The lofty clearstory is lighted by bilobiate windows, the heads showing a trefoiled circle, and in the quire a six-foiled circle with seven radiating fronds. It will thus be seen that the leading motive of the tracery is geometrical, which is perfectly appropriate to a First Pointed church; but we take this opportunity of saying that we observe with much regret that in some of the plans for our proposed new English cathedrals, geometrical tracery is employed with Third Pointed outlines, to the exclusion of the more highly decorated forms which harmonise in general better with the genius of the architecture. As to Perpendicular, we trust never again to see it in a first-class English church. We sincerely hope that the plans which have been exhibited are not meant to be taken as complete in reference to the window tracery.

Rheims was the primatial see of Gaul from the days of Clovis and Charlemagne, St. Remigius and Hincmar, down to our own, and its cathedral was the scene of the coronation of French kings, as Speyer was for the German emperors. It was begun in 1211, the first stone being laid by Archbishop Alberic, and was almost completely finished in thirty years, under the superintendence of a single architect, Robert de Couci, a native of the town. It is thus only a few years earlier than Amiens, which was begun in 1220, and not completely finished until 1288. The difference in style is so considerable that one might suppose a century had intervened, Rheims being distinctly marked as Second Pointed. The dimensions are 450 ft. inside by 95 ft., and 110 ft. in height. The effect of the west front is both more simple in the whole and richer in detail than that of Amiens, and would be perfect if the towers were surmounted by spires. The portals project some feet beyond the buttresses, masking the compartments of the façade, whilst at Amiens their projection only fills the intervals between those buttresses. The heads of the portal arches are not filled with sculptured surfaces of wall as usual, but pierced with a rose in the centre, and quatrefoils or trefoils in the compartments. In the upper section of the frontal, the rose, instead of being left uninclosed, as at Amiens, by arcature or mouldings, and raised above the lower zone by the whole height of two lofty galleries, is placed immediately above its level, and is itself inclosed within a great pointed arch, — an arrangement far superior to that of the rival cathedral. The spandrels are adorned with statuary, and flanking this in the lateral compartments are two beautiful pointed fenestrations, through the apertures between the mullions of which are seen the flying buttresses of the clearstory. The third or upper zone of the frontal presents a gallery, surmounted by a richly-foliated arcature of niches, with forty-two statues of the kings of France, from Clovis to Charles VI., each standing on a massive panelled console; the three central niches topped by a peaked gable, forming an ornamental termination of the whole façade. The simple arrangement and great height of the three zones produce a much more satisfactory effect than at Amiens, the attention not being distracted by so many different members, whilst the multitude of the details is really much greater, and the *ensemble* thus far richer in composition. The four buttresses marking the division of the nave and aisles and the lateral extremities, are of great elegance as well as strength, their faces being adorned with colossal statues of saints, each set in its niche, the pinnacles or caps formed of octagonal turrets, with panelled surfaces. In all the principal French churches the *chevet*, or eastern termination of the fabric, is an apse of seven or five members, with three in the clearstory,—an arrangement infinitely superior to the commonplace flat ending of the English cathedrals. That of Rheims is decidedly inferior in effect to Amiens.

The churches of Rouen, we are glad to think, are familiar to many of our readers, from the position of the town on one of the great lines of communication between London and Paris. It is not of the cathedral we wish to speak, since that is universally given up as a specimen of the last and worst style of the Flamboyant, just as it was about to fade into the Renaissance, and when exteriors were overrun with lacework and frippery in stone.* But the architectural crown and glory of the city is the great church of St. Ouen or Owen (said to be the fifth in succession which has been built on the same spot), and which may be fearlessly pronounced the most beautiful and perfect in Europe. The principles, so seldom realised in practice, of elevation, lightness combined with strength, and enrichment without exuberance, are here displayed in their full force and completeness. It was begun by Abbot Marc d'Argent in 1318, and carried on uninterruptedly for twenty-one years, when the choir and transepts were completed; the nave works were not resumed until 1490. It is interesting to know that the west front, one of the most beautiful specimens conceivable of richly-decorated Gothic, was begun so late as 1515, at a time when the Gothic style in England was dead. The annalist of the church is Canon Pomeraye, whose "Histoire de l'Abbaye Royale de St. Ouen de Rouen," published in 1662, is a most curious and valuable work. It gives an engraving of the famous rood-screen, considered to be the finest in France, and destroyed by the revolutionists of 1792, who established a smith's workshop in the church. The dimensions of the church, as given by him, are 416 French feet in length, and 100 ft. in height, equal pretty nearly to 444 ft. and 106 ft. English. The length of the nave is 248 ft. English, and the width of the central portion 36 ft. The construction of the quire and chevet, and their exterior appearance, are the same as at Amiens, the beautiful effect being produced in each case by the roof of the aisles not being carried up in an inclined plane to the foot of the clearstory, as in the ordinary construction, but arranged in separate octagonal compartments for each bay.

* It may be proper to say, for the benefit of some of our non-professional readers, that the Flamboyant style of ornament and tracery receives its expressive name from its imitation of the undulating flame of a torch or flambeau.

The round of the great western window is the most perfect specimen of pure Flamboyant or highly-decorated tracery to be found anywhere, the arrangement being of two roses, one within the other, and the foliation branching out into a maze of beautiful forms, which must be seen to be appreciated and enjoyed as they deserve. The lower part of the window rather detracts from the excellence of the whole, the pierced construction and the slenderness of the transom bar giving an appearance of feebleness, and of confusion between the circular and upright parts of the window, which is not pleasing. The central tower rises, according to Pomeraye, to a height of 100 ft. above the roof of the church, and terminates in a grand open crown or diadem, divided into two stories lighted by elongated lancets of the most graceful proportions, and supported by flying buttresses of a construction at once so light, so strong, and so richly elaborated, that the form becomes a study of itself. The same is true of those which support the lofty and diaphanous clearstory, with its splendid range of trilobiate and quadrilobiate windows. In the interior of the church, the height of the arches, and the size of the double row of windows in the upper and lower stories, give the building an air of lightness peculiar to itself, whilst the fancy and delicacy of the decorations, and the variety of the tracery, are not to be described in words.

In all this we have merely repeated opinions which have already been expressed by men of the highest pretensions to correct judgment in architecture, but it is unpleasant to reflect that St. Owen's has been made the subject of some very tasteless criticisms by two well-known English writers. The late Dr. Whewell unaccountably declared that the style, which everybody else finds to be decorative carried almost to excess, was "on the whole too plain, except in some particular portions, to be a good example" ("Remarks on the Churches of Germany and Normandy," p. 234). Another writer still living, whose pretensions to architectural dictatorship have given rise to considerable amusement, actually in one of his books charges the construction of the central lantern with barbarism, "the pierced buttresses looking about as much calculated to bear a thrust as a switch of willow, and the pinnacles, huge and richly decorated, having evidently no work to do whatever, but standing round the central tower like four idle servants." It is rather preposterous to expect work from a pinnacle, which everybody knows to be merely an ornamental adjunct to a summit or sky-line. With regard to the buttresses, we deny the correctness of the statement that they have any such look as above described; but a more substantial answer to the objection is that they have been found capable of bearing all the thrust to which they have been exposed for 400 or 500 years. The nave, it seems, is "a base imitation, in the Flamboyant period, of an Early Gothic arrangement; the niches in its piers are a barbarism," &c. Was the writer of this incapable of reflecting that the only real question for the architect was, not whether the arrangement had been employed at an early date, but whether it was in itself a good one? But this and much more of the like sort, which will be found in the book called the "Seven Lamps of Architecture," was to be expected from a writer who pronounces the Doge's Palace at Venice to be a model of perfection. Venetian Gothic, as shown in that edifice, is a style which has the prettiness and pettiness of a toy,—and there let it rest.

ROTTEN ROW.

Sir,—You alluded the other day to the queer-looking stuff that was being put into Rotten-row. Now that the said stuff is hidden, and the top finish put on, I am equally struck with the extraordinary amount of "barrel" which has been given to the roadway, and will make it anything but comfortable for horses until a great deal of wear has been given to it. Horsemen and horsewomen who ride along the crown of the road will doubtless have an agreeable and wide prospect of the surrounding scenery, without any drawback, but those who progress along the southern avenue will have the pleasurable sensation of riding on the side of a hill. I do not know very much about how horses are built, but I should not think it could be very good for their construction to be progressing with the feet on sensibly lower ground at one side than on the other.

A Lounger.

FROMENTIN, THE PAINTER.

Never, even in Paris, has there been so much talk about art as at the present time, and the Hôtel Druot has never been so attractive to its frequenters as it is just now. Scarcely has Diaz's collection been dispersed, before the rooms in which his treasures had been disposed of, were thrown open for the exhibition of Eugene Fromentin's Oriental pictures and sketches, and they have attracted even a larger number of admirers, and more liberal purchasers, than did the works of the more famous but not more esteemed painter.

M. Fromentin, has special claims to the admiration of his friends; he is not only a painter, but an accomplished author, and a well-known contributor to the *Revue des Deux Mondes*. No French painter,—no painter whatever,—has realised so much or so truly the life of the Oriental. In the desert, M. Fromentin seems always at home, and able to make a convenient painting-corner for himself. Without the exquisite finish of Jerôme, he is equally, perhaps more, faithful; and in a more solemn tone of colour than Muller or Lewis indulged in, Fromentin shows quite as keen an appreciation of the marvellous hues of the East as either of our great Oriental painters.

Fromentin knew the country better than any other painter; he could paint it in pen and ink as well as with brushes and pigments, and as he saw the folly of painting *haremes*, which he had never entered, or depicting *odalisques* surpassing imaginary beauty, with him to draw a group of palm-trees or a temple was to be as faithful as Bonomi, whose beautiful drawings of the East would be thoroughly appreciated here. In all that Fromentin painted he put his heart. Like our own Millais, who has been heard to say, as some excuse for the high pecuniary value he puts on his work, that "with every picture he gives a guarantee that he mixes with his colour a portion of his heart"; in some pictures it is less, in others you get a big piece, it is for you to find out how to obtain the largest share. Mr. Agnew will tell you, for a percentage, exactly how to select the heart; but here there is no Mr. Agnew, so we have to find out these secrets for ourselves, and the result is, that very exquisite pictures by very accomplished artists are to be purchased for something less than a comfortable competency.

Rarely, if ever, have the friends of an artist shown so affectionate a desire to obtain some scrap, however slight, of their favourite's work, and in this respect Fromentin's sale resembles that of poor Mason, and in both instances the pictures of these retiring painters will become more valuable the more they are known.

The exhibition of Diaz's and Fromentin's pictures and sketches, within the last two weeks, is likely to have a very marked effect on the landscape art of Paris; for never have artists had a better opportunity of studying the processes by which two very different minds directed their hands to accomplish beautiful work, and never have the secrets of the brush been so undisguisedly divulged, or so plainly expressed. We may expect to see fewer realistic landscapes, and even greater triumphs of atmospheric effects; still more lovely simple harmonies of tone and colour, painters will try to think well before they imitate too closely, and will look more than ever at the works of the older men,—of Ruysdaël, Hobbema, of Chrome, of Rosseau, or of Fromentin.

Of the Orientalist painters Fromentin unquestionably stands at the head; no painter has ever, until he painted Oriental life, altogether avoided the vulgarity of over-dressing his subjects; pots and pans from Wardour-street or the Hôtel Druot never by any chance take a too prominent place in his design. He seems to have the power of fascinating his sitters into perfect repose for just sufficient time to allow of his painting them,—whether riding, or sitting, or asleep,—precisely as he has seen them in the desert.

Fromentin's black and white work reminds one of Leighton's equally perfect method, and such drawings teach the great lesson of how great artists have been able to achieve so much excellent work; the secret they themselves will tell you consists in taking the utmost pains with the earliest processes. To the surprise of the experts, M. Fromentin's collection has realised more than double they had calculated on, and the sale which has just closed, and which has occupied the whole week, must have realised about twenty-five thousand pounds.

Paris.

LIVERPOOL ART CLUB.

The Liverpool Art Club gave a dinner the other evening to Mr. J. A. Picton, F.S.A., chairman of the Library and Museum Committee, under the presidency of Mr. P. H. Rathbone.

The President, in proposing the health of Mr. Picton, said that they had in Liverpool one of the very best organised libraries in England. He knew the library of Birmingham to be an excellent and well-organised one, and he was acquainted with the libraries of other towns, but he did not hesitate to say that for perfection of organisation he knew no library like their own, and he maintained that this was almost entirely due to Mr. Picton. The committee had, no doubt, assisted Mr. Picton, but it was that gentleman's organising ability which had given them a library of which they might be very justly proud. He (Mr. Rathbone) was sure there was no one who had to work with Mr. Picton but would acknowledge another virtue possessed by that gentleman—one of the rarest virtues he had ever met with,—and that was the virtue of perfect justice. Mr. Picton's work had been a frank and fair acknowledgment of what a man could do; while he frankly and fairly put his foot down when he saw a man could not do his work, and pretended to do it. That was such a rare virtue in Liverpool that it was worthy of especial honour. They were most fortunate, now that they were going to have an Art Gallery, that Mr. Picton would be at the head of it; for, if they were not to be flooded with rubbish, they must have a man with nerve, and capable of doing justice.

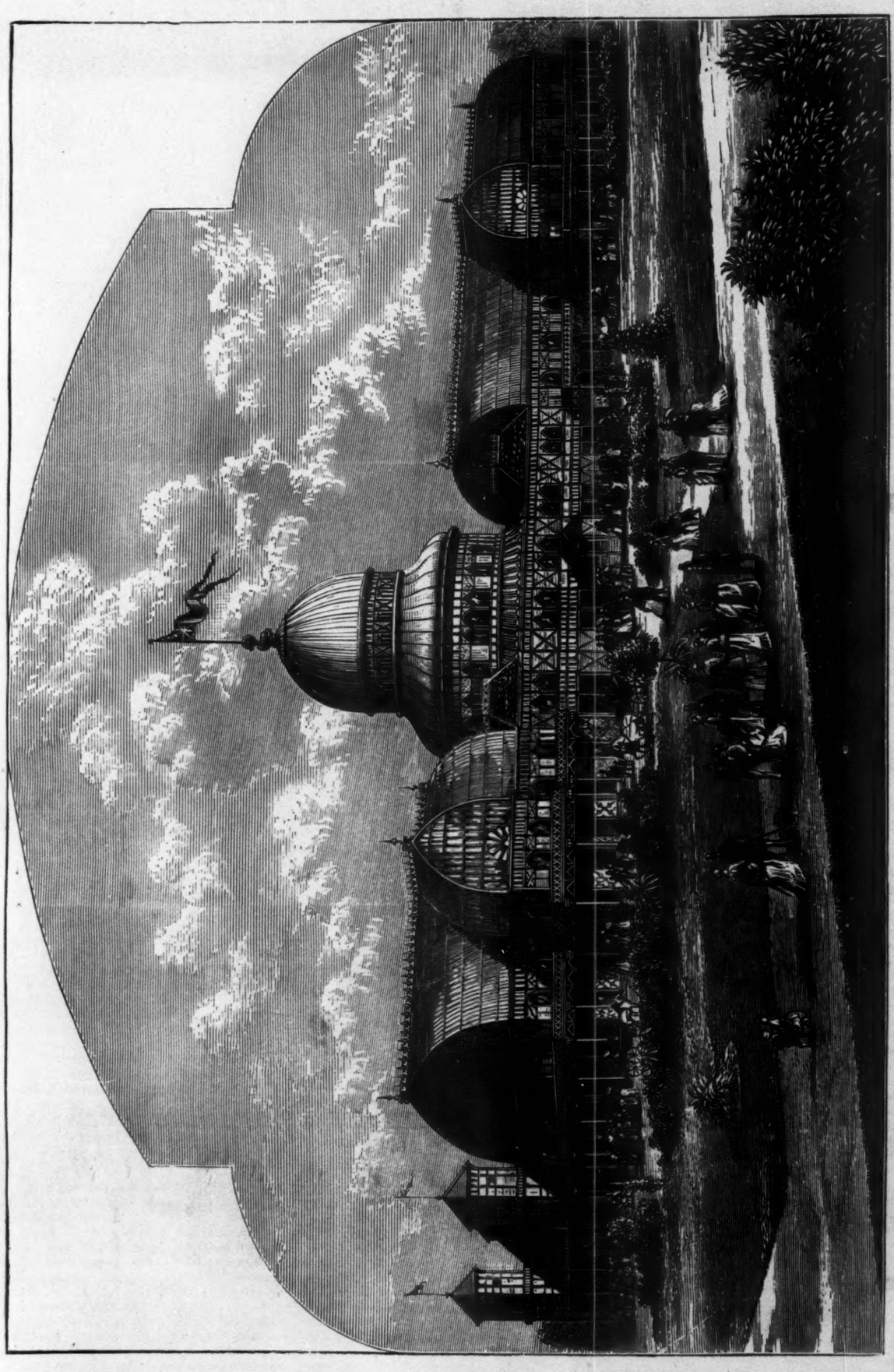
Mr. Picton, in returning thanks, said he thought that that night greatness was being thrust upon him. If in any humble way he had assisted those who were far better adepts in art than himself to carry on the great work of elevating the tastes of the people by pointing out beauties which not only pleased, but tended to instruct and elevate the character and promote the happiness of society, their favour that evening would stimulate him to do still more whenever he could. He had endeavoured to the best of his ability to develop that noble institution with which Mr. Rathbone, Mr. Higgins, and other gentlemen were associated so long. He believed good had been done, and that good would be done; and he thought, now that the institution had tided over its difficulties, it had taken fast hold on the public mind, and had now begun to be properly appreciated.

A *conversazione* was afterwards held, at which Mr. Picton read a paper on the Architecture of Liverpool. To this we will return.

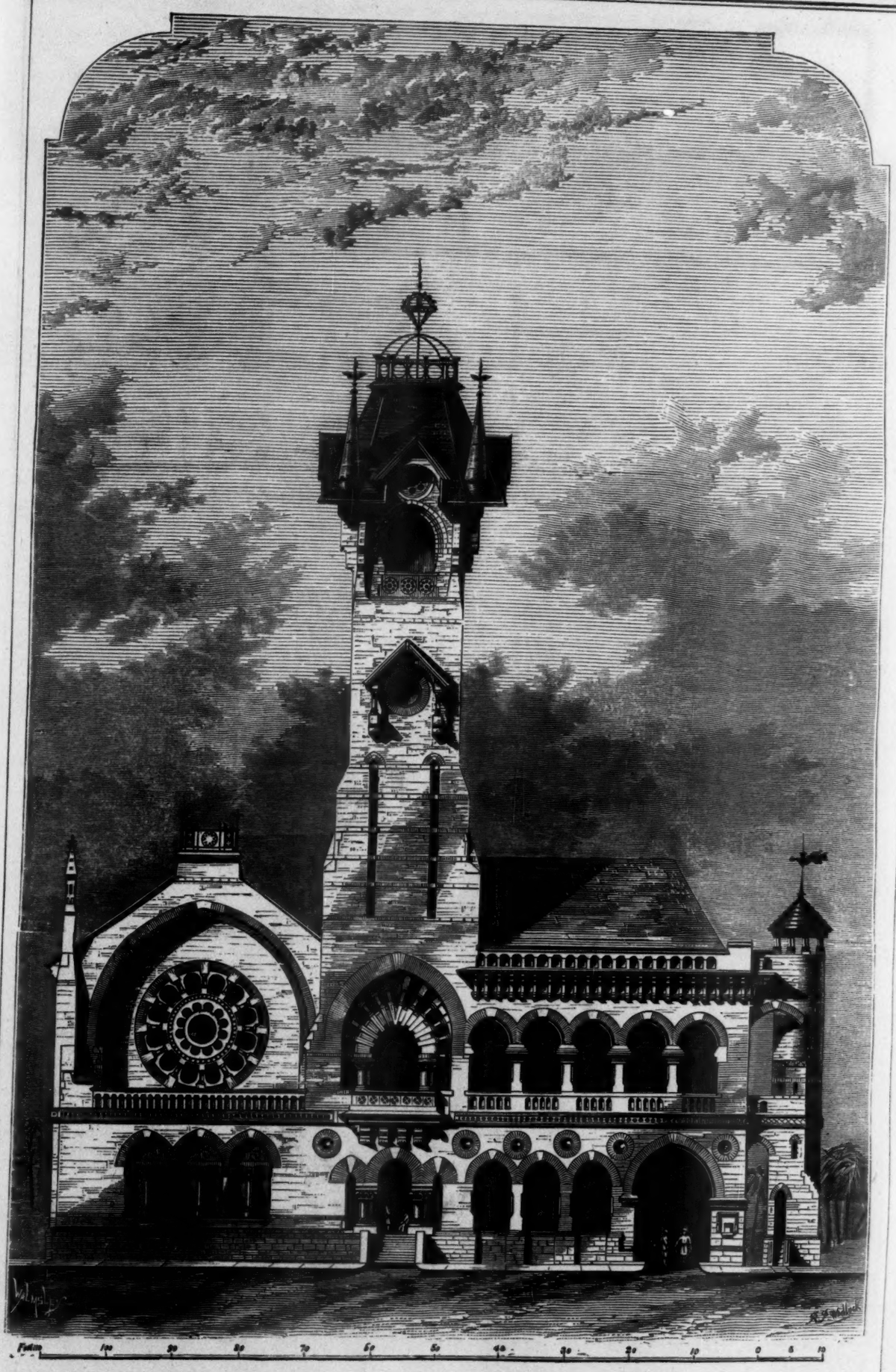
PROPOSED FLORAL HALL AND AQUARIUM FOR SOUTHSEA.

The Southsea Floral Hall and Aquarium, the design for which we engrave, was proposed to cover the grounds (including that on which the skating-rink now stands) on the north-west side, and adjoining the spacious building situated on Southsea Common, known at present as the Assembly Rooms and Baths. These are bounded on the south by the sea-shore, commanding splendid views of the Isle of Wight, Gosport, and the Southsea Pier; on the west by the old fortifications of Portsmouth, and the harbour; the north-east by the Southsea Common, which ranges from Portsmouth and about a mile along the sea-shore. This being Government property is used for practising and reviewing the troops, thus enlivening the spot, and causing it to be a centre of attraction. The proposed enlargement was to be constructed chiefly of glass and iron, to form a winter garden and covered skating-rink. The portion not required for the rink was to be utilised as a ball or concert-room; also as a promenade and lounge. The present ball and assembly rooms were to be converted into spacious supper, retiring, and billiard rooms, as well as a large restaurant and café facing the sea, adjacent to and abutting upon the proposed aquarium. The designs have been prepared, under the direction of a company, by Mr. H. James; but difficulties, as we are informed, have intervened, and the fate of the scheme is at present unsettled.

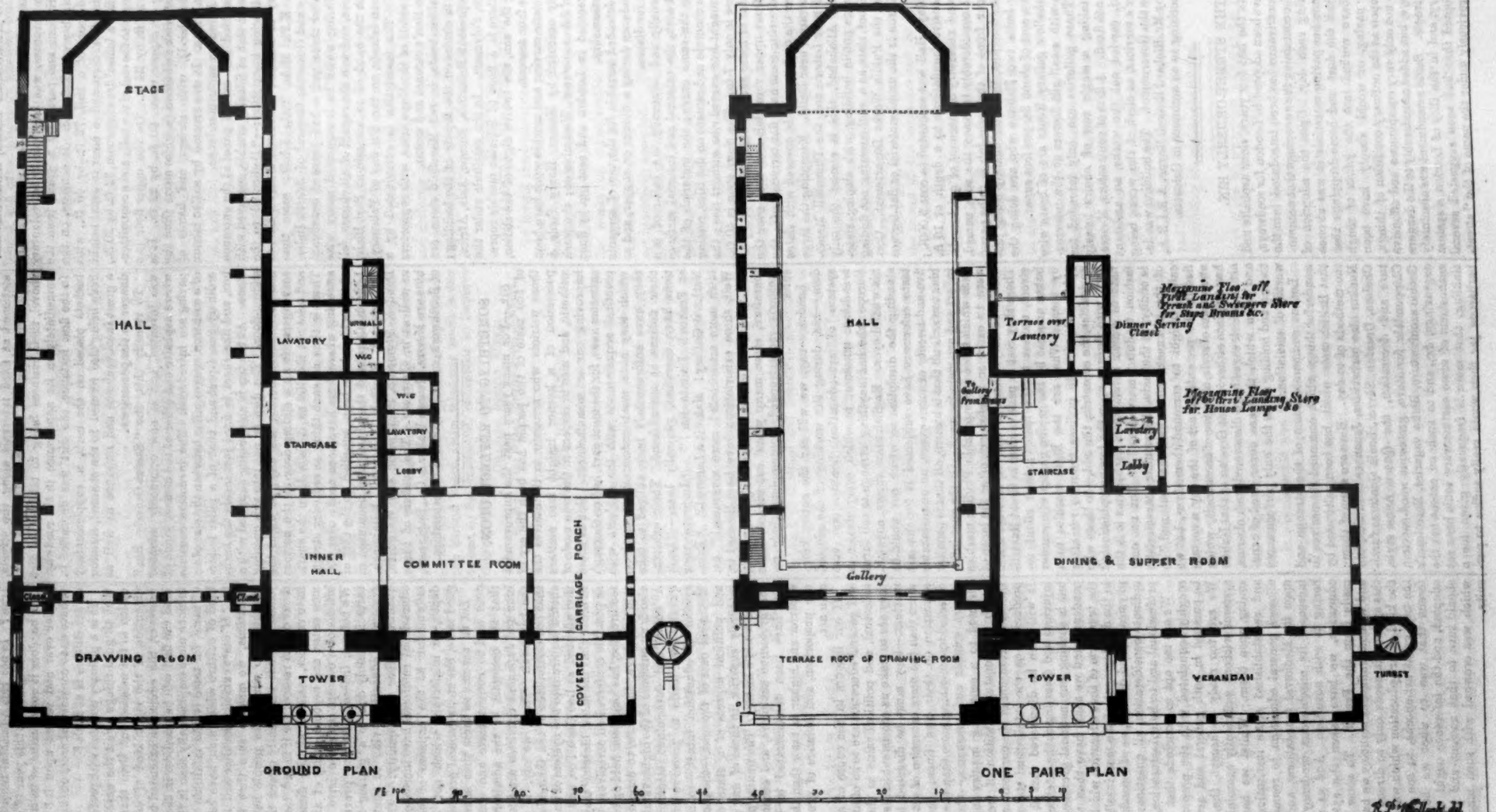
Liverpool Architectural Society. — At the meeting held at the Royal Institution, on Wednesday evening, the 7th inst., there was an exhibition of designs submitted in the Stock Exchange competition, and a report upon the same, by Mr. Joseph Boult, was read.



PROPOSED SOUTHSEA FLORAL HALL AND AQUARIUM.—Designed by Mr. H. James.



THE MAYO MEMORIAL HALL, ALLAHABAD, INDIA.—MR. R. R. BAYNE, ARCHITECT.



THE MAYO MEMORIAL HALL, ALLAHABAD.

MAYO MEMORIAL HALL, ALLAHABAD.

THIS building, intended for municipal and public purposes, was built partly by voluntary subscriptions and partly by a grant from the Municipality of Allahabad. It consists, on the ground-floor, of a hall, 72 ft. by 40 ft., with galleries, 5 ft. deep, and a clear internal height of 50 ft.; a ladies' drawing-room, 32 ft. by 20 ft., opening into the end of the hall; and a committee-room, 20 ft. by 24 ft. On the upper floor is a dining or supper room, 60 ft. by 22 ft. It is built of brick and stone (a white stone from the neighbourhood), with strings and bands of Minton's tiles. It was erected by native labour under European superintendence.

A moulded and carved panel at the entrance contains a slab of Silesian marble, engraved with the following inscription:—"Dedicated to the Memory of Richard Southwell Bourke, Earl of Mayo, K.P., M.A., P.C., LL.D., some time Viceroy and Governor-General of British India, who, after three and a half years of beneficent rule, during which he inaugurated many wise measures, and won the regard of all classes, fell beneath the hand of an assassin at Port Blair, Andaman Islands, on the 8th day of February, 1872." The inscription is surmounted by a carved shield of the Mayo arms, with supporters and the Earl's coronet and motto.

Medallion-heads, in red Mansfield stone, are carved in circles on the façade of the building; these represent Britannia, Europe, Asia, Africa, America, Polynesia. In the vestibule under the tower there is a floor of Silesian marble representing the sun, the twelve signs of the zodiac, and the four seasons.

The stone carving and marble work have been carefully executed by Messrs. Henry Poole & Sons, of Johnson-street, Westminster; the work was executed in London and sent out by Suez Canal steamship.

The detached turret is for the use of servants in attendance during a dinner or supper, and as an exit for dishes.

Externally and internally the hall-roof is a pointed arch, the external and internal surfaces keeping the same curve; the materials of the roof are concrete and cement on flat tiles, resting upon wrought-iron curved ribs without ties; the thickness is only 7 in. The clear span is 40 ft., the radius of inner surface being 26 ft.

The front upper verandah and that over the ladies' drawing-room have flat terrace roofs; the roof over the dining-room is covered with slates from Rewaree, near Delhi. Excepting the large hospital near Lahore, and the Thornhill Memorial Hall, Allahabad, this is almost the only other large public building with sloping slate-covered roof, slate as a roof-covering not finding favour in the Public Works Department. Corrugated iron is the usual material or flat-terrace roofing.

The Mayo Hall was estimated to cost 5,000*l.*; but extensive foundations to a depth of 16 ft. were found necessary on account of quicksands, and will considerably increase the sum named. The upper front of the verandah is to be paved with *opus insertum*, there fortunately being just now in India two Italians who are doing the work at a cost of about 2s. per foot super.

The shallow gallery fronts are of brass wire netting, with small gilt flowers at the intersections. These galleries are only intended for ladies, taking a single row of chairs loosely placed, not fixed. A firm of contractors, Messrs. Frizzioni, carried out the works, an assistant engineer's services, as clerk of the works, being given by the Government. The building was designed by Mr. Richard Roskell Bayne, A.R.I.B.A., now practising as an architect in Calcutta.

THE STREET-ORDERLY BIN.

WITHIN the last few years, since asphalte and wood have been adopted in London for roadways, a new contrivance has been introduced into the streets for containing the sweepings that accumulate during each day. Upon the adoption of these smoother paving materials it was at once found that the dust and horse-droppings that would have worked into the joints of rough granite paving, or would simply have been looked upon as the ordinary condition of things, became not only very conspicuous and offensive to the eye, but added considerably to the dangers of the streets. Some amendment was absolutely necessary, and in the City of London a system was adopted that had been suggested several years previously under the name of the "street-orderly system." A number of boys were stationed at fixed intervals along the streets, each being supplied with a brush and dust-shovel, their business being to take up the dirt immediately on its appearance in the roadway. In the first instance, the dirt was deposited in baskets placed on the kerb, a supplementary heap being also formed in the channel, forming a great inconvenience and nuisance as well as danger to the passengers.

To remedy this, the "Street-Orderly Bin" was invented, and is now commonly adopted where asphalte and other of the cleaner kinds of paving are introduced. The invention consists of a cast-iron square pillar between the size of an ordinary guard-post and that of a pillar letter-box, and like them is fixed just inside the kerb-stone. At the top is an opening supplied with a sliding-door. The dirt is put into this opening and accumulates during the day; at night the scavengers lift up a sliding-door at the bottom and take out the dirt as it falls down the shaft. There is thus no such thing as ordinary street-sweeping where these have been used; over 500 of these bins have been supplied to the City of London alone, and they have also been used in Birmingham, Sheffield, Liverpool, Edinburgh Dundee, Plymouth, Southwark, and Walworth, as well as in Guernsey. The makers of these bins are Messrs. George Waller & Co., Engineers, of Southwark, and of Stroud, Gloucestershire.

SOMETHING TO REFLECT UPON.

SIR,—For many years past the improvement of the taste of the people has been the cry of those patriots who arrogate to themselves the possession of a keener insight into matters æsthetic, and also in respect to the true mode of improving our art manufactures. But as those agitators have, for the most part, had no thorough practical acquaintance with the subjects with which they have most concerned themselves, they have unfortunately been obliged to take their notions at second-hand. Their exhortations have, therefore, generally been,—"Look at France! Imitate her!" "Improve your National Gallery! Make it a Louvre!" "Establish more art-schools! more museums!" &c. Well, these exhortations have been listened to, and to a great extent followed. We can now, therefore, after many years' experience of the methods recommended, contemplate their results.

London,—nay, we will say the entire kingdom,—has, during the working of the adopted system of art-education, become one vast *bric-à-brac* museum, to which every dealer in Europe who has anything strange to sell turns his wistful eyes. English taste shows, notwithstanding the discipline to which our would-be taste reformers have subjected it for the last five-and-twenty or more years, an unmistakable bias towards all that is bizarre, all that is peculiar in art and art-manufactures. Of the vast influence which those incomparable Phidian marbles were to exert on English art, after the lapse of half a century, there is not the faintest trace. There they rest in passive state in Great Russell-street, useless to the nation; their silent rebukes unnoted by the gaping gazers who wander by them. What are the Elgin marbles to a public whose taste inclines them to run after curiosities, the eccentric, the odd,—to those who turn with frowns upon the few unsophisticated natures which revolt from barbarisms it is the fashion to dub "marvellous"? But not only is oddity, in the main, the peculiar characteristic of the nicknacks with which the "cultured," so called, delight to surround themselves, but we find in the pretentious art of the day a certain aberration of style, a degree of eccentricity which has no place either in that Grecian or that Italian art in which sages have discovered such charms, and upon which they are never tired of expatiating and holding up as the only performances worthy of emulation.

Let us enumerate some of the strange and wonderful things which commend themselves to that British taste which has been cultivated by the methods of to-day. Here are some of them: Nankin blue barbarities, Japanese crudities, Old Chelsea, Dresden, Sèvres, Louis Quatorze furniture and decoration, the Queen Anne style, Chippendale furniture, grotesque wood-carving, Gothic architecture, Blake vagaries, Bartolozzi's engravings, &c., and to such an extent has the enthusiasm of some earthenware souls been set tinkling, that more is frequently given for a barbarous jar than would really suffice to purchase a good work of art. Is not this literally true? Is not this a faithful record of the state of taste in England in this year of grace? And if it be, does it not demand of us that we should ponder over and reflect upon it? Does it not behove us to consider wherein our modern system of art-culture is at fault?

It is a primary position with profound thinkers that all good things await the extension of education to the masses, but then that must be the extension of the right kind of education. If, however, the education extended be not of that kind the fact will be manifest in the results, and in none more emphatically than in the perversion of taste, for taste is the infallible index of the kind of culture which men have been subjected to. If taste exhibits peculiar and morbid manifestations, we may be sure that the course of education to which the people have been subjected did not sufficiently guard the enthronement of the reason, for if it had, taste would not have run riot, resisted all the dictates of common sense, and become guilty of all those exhibitions of a corrupt taste we have enumerated. We believe, indeed, that the prevalent bizarre taste is mainly due to a glaring defect in our system of education, viz., to that leaning to quantity rather than quality. Our would-be educational reformers have increased the area of information at the expense of accuracy and depth,—a misfortune which not only affects good taste, but stops general progress.

Let us assume as facts that sound education does lead to correct taste and sound art, and that the ecstacies of the admirers of Nankin blue and Japanese crudities are just tributes to the beautiful. Then, we say, it is high time that the Committee of the Council of Education should inquire into the system of national education adopted at Loo Chou Foo, and at Nagasaki, in order that the same blessing may be as early as possible conferred on ourselves. Gothic architecture, too, has long been held up to our admiration; we have, therefore, to conclude that this, also is an outcome of the highest state of culture. A noble and determined attempt has consequently been made to preserve the Mediæval system of education intact,—to maintain the Mediæval cast of thought,—the social, religious and political aspects of a state of society so infinitely superior to those of any other period of the world's history. The quaint painted glass, the grotesque sculpture, and eccentric decoration have been demonstrated to be infinitely superior and higher in taste than the simplicity, the proportion, and balance of grovelling Grecian art.

If our labours in the cause of art-education and general education are to be of any moral, intellectual, and political value to the nation,—if they are to make us consistent in taste and other matters,—they must be directed to something more than the mere extension of art and general education on their own lines; they must be directed to something more than the multiplying of art schools and museums,—they must be directed to a searching inquiry into the effect which the constant addition of fresh subjects, the daily extension of the curriculum of study is producing on the intellectual status of society. It will then be discovered that it is not only injurious and dwarfing to the intellectual stature, but is shaking our national greatness and independence, and we shall have then to determine the true form of that education which is essential to the development of the man intellectually and physically, and dismiss, as of secondary and subordinate consideration, all questions relating to professional and technical education.

We are too apt to conclude that we are thoroughly acquainted with the proper courses to be pursued in both general and art education. We are too ready to accept the established systems without sufficiently examining and reasoning upon them. Whilst we have reformed and re-established some institutions, we have allowed general education to remain unmoved upon its Mediæval foundations, and have only increased its mischievous tendency by incumbering it with novelties. And as regards art-education, we have taken the system ready-made from the French. To show how readily and without sufficient scrutiny we have accepted this system, it needs only to direct attention to the kind of art-education which was pursued in the two great art-epochs, to see how very different that was to what we have ourselves adopted, and the inference ought to be that we should turn to that ancient and better system which was crowned with such magnificent results.

Our professions and practice in art matters are entirely at variance. We talk with enthusiasm, or rather a *seeming* enthusiasm, about Grecian and about Italian art, about Godlike instincts, *cum multis aliis* gong-sounding expressions, till sensible men shift their hearing-trumpets, and, like Sir Joshua, only take snuff. But all this is mere talk, mere profession; it is hollow and meaningless, as we may assure ourselves if we only refer to that list, to that bill of incongruous fare which indicates the queer and peculiar tastes of the reputed *cultivated* of 1876, and which, notwithstanding all the high-art protestations of the time, is turned to, much preferred, and infinitely more relished than the best art. All this *bric-à-brac* fervour is incompatible with a genuine taste for and real appreciation of the best Grecian and Italian art. The one class of things professed to be admired is in principle totally at variance with that other class of objects which we now make our household gods, with the general consent and approbation of *cultivated* society.

When we come to closely examine the behaviour of that class of society which considers itself "educated," we cannot help noticing that it is fraught with inconsistency; that its conduct is capricious, without stability; that it does not act upon fixed principles; that its taste is more the vassal of fashion than the subject of common-sense; and, even worse to relate, its capricious and vicious taste is esteemed decided evidence that the possessor has attained to the seventh heaven of sensitive discrimination and appreciation. This is really a very shocking state of things, for it indicates a falling off in intellectual robustness. If this want of rectitude and consistency, if this want of thought were confined to matters of taste alone, it would not, perhaps, cause us very great uneasiness, but unfortunately it is extended over the whole field of knowledge. In the blind assumption that intellectual power is in proportion to the quantity of things learned, instead of the degree in which the mind approximates perfection as an instrument of thought, people are becoming shallow,—they are losing the ancient English habit of pondering upon and thinking over things; they are in consequence certainly more plastic to the wire-pullers, and may be turned hither and thither at will; but this shallowness will neither make us great in art nor anything else, and if we do not mend our ways we shall lose both the respect of the world and our national independence. METER.

THE METROPOLITAN BOARD OF WORKS' PROPOSED STREET IMPROVEMENTS, 1877.

SIR,—In a communication on the above subject, in your impression of the 27th ult., by Mr. Crane, the worthy churchwarden of St. James's, I observe that he suggests that the merit of the projected improvements is due to the *Builder* and to himself, with some others he names, for promoting the schemes many years ago, which are now to be carried out, and I must partly agree with this, as regards Section 3 of the plans, where he is fully justified in his conclusions.

In respect to Section 6 of the Metropolitan Board's scheme, however, he states that Mr. Bidgood was the original projector of this scheme seven years ago. This I submit is not so, and although quite willing to give the gentlemen mentioned all credit for the efforts they made to effect the improvements so much required, but which efforts were not at the time successful, I must claim to be the projector of the new route from Tottenham-court-road to Charing-cross, now adopted by the Board of Works. Mr. Crane states that the deviation from the route proposed by Mr. Bidgood was doubtless necessitated by Mr. Albert Grant's improvement of Leicester-square, which is hardly correct. The "Central London Railway and New Street" Abandonment Bill having passed its second reading in June, 1875, at this precise time it occurred to me that the Strand District Board of Works (of which I have the honour to be a member) should at once memorialise the Board of Works to construct a new thoroughfare from Tottenham Court-road to Charing-cross, by a new and more direct route than any previously projected. In June, 1875, therefore, I purchased the Ordnance Survey maps of the district, and planned thereon a street 60 ft. in width from Bosier's-court, Oxford-street, to the eastern end of the National Gallery, leaving the new Savings Bank building to form the south-eastern corner of the new street.

This plan I submitted in the July following to the Strand Board, with the following resolution:—

"That in view of the 'Central London Railway and New Street' Abandonment Bill having passed, and of the necessity for providing more accommodation for the traffic from the north-west of London to the south, this Board do memorialise the Metropolitan Board of Works to widen Crown-street, Soho, from Oxford-street to Moor-street, and to make a new street from Moor-street to St. Martin's-place through Newport-market, crossing Cranbourn-street and Hemming's-row, and that the same be carried out as a metropolitan improvement, and that the vestries of St. Giles's and St. Martin's be invited to co-operate with the Board in this object."

The motion was unanimously adopted by the Strand Board, and a memorial was duly sent in to the Metropolitan Board, together with the plans submitted by myself, and was, in November, 1875, referred to the Works and General Purposes Committee, but was too late to be included in a Parliamentary Bill for the ensuing session. Next year, however, the Metropolitan Board, on the report of their engineer and surveyor, adopted this plan submitted by myself to the Strand Board, in preference to all others, as being the most direct and the least costly to carry out.

Now, while fully recognising and giving due credit to Mr. Crane and Mr. Bidgood's exertions to effect the same object by different means in former years, I must, in justice to myself and the Strand Board, claim whatever merit is due to our, so far successful, endeavour to improve this central district of London.

CHARLES STACEY WEBB,
Member of the Strand District Board of Works.

GRANITE BUILDINGS.

SIR,—I have followed with much interest the correspondence on this subject in your columns, and while agreeing that it is desirable, if not necessary, that the work should be occasionally cleansed in London, I must take exception entirely to Mr. Trickett's last statement as to granite being one of the "worst building materials possible." Since the great fires of Chicago and Boston, I have, again and again, been met with the same unfounded charge against granite, the belief in which has become apparently very widespread in the profession; and while visiting the States last summer, I thought I could not do better than investigate the matter: so went to Chicago and searched among the *débris* of the still unbuilt ruins without finding so much as a single atom of granite, while architects and builders united in saying that (whereas the whole ruin was attributed by Europeans to the use of granite) *they* did not know of a single granite building destroyed in the city. Again, in Boston I found that, while the granite there had *lost flakes off the arrises*, when the cold water came in contact with the almost red-hot granite, yet the substance and the body of it remained unchanged and as strong as ever. But far beyond the weight of this evidence is the fact that the United States Government have in progress at the present moment the magnificent buildings for the State, War, and Navy Departments, in Washington, which are "absolutely fire-proof," and built entirely of a granite, closely resembling the Irish "Derramore" granite (that employed by Mr. Waterhouse in the New City Hall entrances, Manchester). Then the new Post Office, New York, only just finished at a cost of between 1,300,000*l.* and 1,500,000*l.*, and in the Doric and Renaissance style, is altogether granite and *fireproof*. The new Masonic Temple, Philadelphia (Norman), and innumerable other granite buildings scattered through the States, and all erected *since* the great fire, prove most effectually that in the experience of their architects granite is not, as Mr. Trickett would have us believe, "one of the worst possible building materials": a geologist would laugh at the idea.

It is remarkable also that all these buildings keep as fresh-looking and clean as though only just out of the mason's hands, while our London soot so quickly makes its mark on our buildings. In Liverpool, Aberdeen, &c., however, we find that even the unpolished granite firmly resists both time and dirt. See the Royal Infirmary and Marshall College, Aberdeen; Balmoral and Cluny Castles, &c., in Scotland; the Alexandra Buildings, Dale-street, Liverpool; and many other minor works all over the country, all showing that it is only in exceptional positions that granite becomes dirty and defaced.

The question of cost is, I admit, the more serious one; for, though Liverpool, Manchester, Bristol, and other places on the west coast can obtain the Bessbrook granites almost as cheaply as Darley Dale and Hollington stone, yet the Londoner's granite, with heavy freights and railway carriage, must come rather more expensive; but if the beauty and durability of the material be put in the balance as against the extra cost over sandstone, no one could help voting for granite in preference, and no other material would be used in London. Now that granite-working has become an art in itself, the architect can have his most elaborate decorations carried out in that material, the result being perfect freedom from the decay that is eating into and destroying most of the cathedrals and monuments of our country. Even statues are now being executed in granite, and with success.

To Mr. Trickett's list of decorative granites you may add, out of the cemeteries, &c.,—in grey, the "Derramore," and in blue the "Carrickbracken," or Bessbrook proper; the group of monuments in the latter being the centre of attraction at the Philadelphia Exhibition, and considered the most beautiful of all the granites exhibited, even when compared with the beautiful native American specimens.

As to granite being soft when quarried, I can only say that a soft granite is an inferior one, and perfectly useless for anything but common rubble work; it can, of course, be easily worked, but should never be admitted into a building.

THOS. M. H. FLYNN.

BUILDERS AND THEIR TENDERS.

IN Bristol there has recently arisen a question on the subject of tenders of considerable importance to both contractors and builders, and one in which great interest has been felt by the trade of the locality. In several cases tenders for works of considerable magnitude were advertised for, the advertisement having at its end the usual words, "The lowest or any tender not necessarily accepted." Tenders were sent in in due course, and ultimately a decision was come to by the advertisers,—notably in a contract for building a place of worship, and also one for a large factory, near the centre of the town,—to pass over the lowest tenderer and give the work to another whose figures were higher. In neither of these cases was there any doubt as to the ability of the contractor whose offer was lowest to carry out the work. The matter formed a subject of discussion amongst the builders of the locality, by whom it was generally felt that the clause in the advertisement was simply inserted to enable the advertiser to set aside the lowest tender if he was not satisfied that the builder making it could satisfactorily carry out the work. It was felt that the tenderer set aside had cause for complaint, more especially in one case where the names of the tenderers and the amounts of their offers, with the accepted one marked, were published in the trade newspapers. In the other case, of the two mentioned above, a certain sum was paid for bills of quantities, and an idea seemed to prevail that this would form a claim on the part of the contractor to the job, his offer being the lowest, in spite of the clause appended to the advertisement. We understand that in the latter case a legal opinion has been taken, and there is a probability that shortly the question will be submitted for the opinion of a court of law. Another point on the subject of tenders which has been also discussed is where advertisements have appeared in print, builders have been put to a great deal of trouble and expense in making out lists of quantities, &c., the tenders have been sent in, and then no one has been appointed to do the work, but the idea of building altogether abandoned.

SALE OF BARNETT'S ASPHALTE PAVING WORKS.

THE use of asphalte for paving in our thoroughfares appears to have received a check, as we have always believed it would. This has led to much depression in the manufacture of asphalte, and some works have been given up. On Tuesday last the lease of Barnett's patent asphalte works, at Deptford, together with the plant and machinery, were offered for sale at the Mart, Tokenhouse-yard, by order of the mortgagees. The property was described as being situated at St. George's Wharf, Deptford, and occupying an area of 26,400 ft., with a wharf frontage to the river of 125 ft. The buildings

and plant, which have been erected within the last five years, were stated to be of the most substantial character, and in perfect working order. The auctioneer stated that the mortgagees were desirous of winding up their security, and that the property would be sold to the highest bidder. In inviting offers he said that the buildings and machinery had cost upwards of 16,000*l*. The highest offer made was the nominal sum of 500*l*., and at this sum the lease and property were actually sold; another lot, containing an experimental benzole distillery apparatus, comprising a retort, with furnace and steam-engine, being knocked down for 20*l*. The premises are held on lease from the Corporation of London, for twenty-one years from Christmas, 1871, at a rent of 250*l*. per annum.

PROGRESS OF BELFAST.

FROM a report of the borough surveyor, Mr. J. J. Montgomery, we gather the following:—The sum expended on the main drainage works in progress amounts to 50,000*l*. 5,000*l*. have been expended on permanent paving during the year 1876; and a great many improvements and other public works have been executed during the year. In addition to these, about seventy-five private streets have been sewered, paved, &c., yearly, for many years. During the last fifteen years, 18,107 houses have been built; and the valuation of the borough has increased in that period from 278,807*l*. to 503,164*l*. The population is now about 210,000. This is certainly good news from Ireland.

HOUSES SAID TO BE UNFIT FOR HABITATION.

Dickey v. *St. Giles's Board of Works.*—This case, at the Middlesex Sessions, was an appeal against an order of the respondents requiring the demolition of two houses, 48 and 49, Charles-street, Drury-lane, the questions at issue being whether or not the houses were unfit for human habitation, and, if they were so, whether or not they could by improvements be rendered habitable.

At the conclusion of the case the Court retired for a short time to deliberate, and when they returned the Assistant-Judge delivered judgment in these terms:—"The order here appealed against, which is for the demolition of two dwelling-houses, does not directly affirm that in the opinion of the Board of Works they could not be so structurally altered and improved as to render them fit for human habitation; but, inasmuch as it refers to the reports of its officers, which are to that effect, and shows upon the face of it that it proceeded upon a consideration of those reports, and after hearing the owner's objections thereto, we considered that it must by necessary implication be deemed to have been made from that point of view; and, indeed, except upon that foundation of fact,—that finding either to be expressed or to be implied,—the order itself would be illegal. But the respondents have not established this condition precedent to the satisfaction of the Court, and the evidence they have adduced for this purpose has, in our opinion, been satisfactorily rebutted by the evidence we have heard from the appellant's witnesses. We are far from saying that these houses did not need alteration and improvement when the attention of the Board was first drawn to them; but we are of opinion that the objections then urged to their sanitary condition have been practically removed, and that this order for their entire demolition was unnecessary and should not have been made. It will, therefore, be discharged with costs."

UNINHABITABLE DWELLINGS.

Rotherhithe.—David Kenning, the owner of two houses, Nos. 55 and 57, Neptune-street, Rotherhithe, was summoned, on the 22nd ult., by Mr. Edwards, the sanitary inspector of Rotherhithe, to show cause why he should not close those houses, they being in such a dilapidated and filthy condition as to be quite unfit for human habitation. Mr. Edwards stated that the roofs were partially open, the rooms full of filth, the water-closets overflowing, and that the ground-floor of the premises, occupied by the defendant and his wife, was in a most filthy state, the adjoining room being used as a stable for a donkey. Mr. Balguy, the magistrate, made an order prohibiting the use of the houses for human habitation.

Westminster.—Mr. Banister Fletcher, of 46, Wellington-road, St. John's Wood, architect, was summoned by Mr. Charles Lahee, clerk to the vestry of St. Luke, Chelsea, for not obeying a regulation applicable to the premises, 18 and 19, Oakham-street, Chelsea, made by the Vestry of Chelsea, and confirmed by the Secretary of State, pursuant to the Sanitary Act of 1866.

Mr. Pemberton, jun. (Pemberton & Reeves, solicitors to the Vestry), prosecuted, and in so doing called the attention of the magistrate to 29 & 30 Vic., cap. 90, sec. 35 (part 3), which enacted, that a vestry having made regulations for the sanitary condition of its parish, the Home Secretary for the time being should duly confirm them, and they should be put in force by the vestry. In the case of the houses at present under notice, they had been registered as lodging-houses with the vestry, and notice had been served as to the condition in which they should be kept with regard to their sanitary and habitable condition, the vestry having obtained the consent of Mr. Gathorne Hardy as to the regulations they had made. The regulations related to overcrowding, want of whitewash on the ceilings and walls, supply of water, cleanliness, repair of floors, proper condition of drains, &c.

Mr. George Sherborne, inspector of lodging-houses in the parish, proved visiting 18 and 19, with Dr. Barclay, the medical officer of health, on January 9th, and they were both in a dirty state. The passages were dirty, the water-butt unfit to supply the house and the hoops coming off, the water overflowing and the water-butt very dirty, the water stagnated in pools in the yard.

Dr. Barclay proved that there was a malignant form of typhus fever close by, and there had been twenty cases already reported. There were two other cases of malignant fever, which would form the subject of other proceedings, as the cases had not been reported to the vestry.

The defendant said he had had no notice. When the complaint was made men were put to work, and the houses were now in a proper state of repair.

Mr. Woolrych fined him 30*s*. and costs (21*s*.) in each case.

LEGAL.

The American Masons at Greenock.—In an action raised recently in the Greenock Sheriff Court at the instance of Messrs. John Coghill & Son, contractors, Smithston, to show cause why Michael Storren, one of the American masons, should not return to the service of the pursuers, which he had left, it was alleged, without just reason, or, failing to do so, be liable to a money penalty or imprisonment, Sheriff Smith has just issued an interlocutor in favour of the respondent.

The respondent, in consequence of an advertisement which appeared in the *Sun* (New York) newspaper, couched in the following terms:—"100 good stonecutters to go to Scotland, two years' work, 10*d*. sterling per hour, passage paid," went to a Mr. Abbott in Broadway, New York, who engaged him to go to Scotland, and at an after interview got him to sign a paper that he would repay his passage-money at the rate of from 15*s*. to 20*s*. per week until the amount, 5*l*. 5*s*., was repaid. The Sheriff rescinded the contract, and refused the prayer of the petition on the ground that the respondent had not been made sufficiently acquainted with the nature of the document he signed.

Claim for Building Materials.—In the case of Eastwood v. H. Hall, which was heard at the Southwark County Court on the 19th ult., the plaintiff claimed 14*l*. for building materials alleged to have been supplied to the defendant.

The supplying the materials was proved by one of the clerks of the plaintiff, but the matter was disputed by the defendant, who contended that the goods were supplied to his son, James Hall. The defendant said he never ordered the goods. His son employed the workmen, and they were paid with his son's money. Everything was done by the direction of his son. Judgment for the plaintiff, amending the summons from H. Hall to James Hall.

Claim for Drawings.—In the Sheffield County Court, on the 18th ult., Messrs. E. T. Smith & Co., of Cemetery-road, Sheffield, sued Mr. Riley Carr Robson, stove-grate manufacturer, for the recovery of 22*l*. 14*s*. 9*d*., balance of account in respect to some ornamental drawings and other goods supplied to him. Judgment for the plaintiffs for the full amount claimed, and costs of three witnesses.

"Grinding Money" again.—In the Westminster County Court, on the 25th ult., the case of Kimble v. Peto was heard. It was an action brought by a carpenter against a builder for "grinding money," the claim being for 1*s*. 6*d*.,—two hours' work at 9*d*. per hour. The claim was resisted on the ground that plaintiff had discharged himself, and under his agreement had forfeited his right to the money claimed.

Plaintiff said he entered defendant's service as a carpenter, on July 27th, 1875, and signed an agreement, in which it was stated that on being discharged he should be allowed the equivalent of two hours' work for grinding and re-setting his tools. In October last, feeling very unwell, he went to the foreman and told him that he was too ill to continue his work, and the foreman told him he had better go home, and he did so. After laying up for about a week he returned to his employment, and told the foreman that he then felt able to resume his work, but the foreman told him that there was no more work for him to do, and that he was to go to the cashier, and get the balance of his wages; but on receiving it, the cashier refused to pay him the 1*s*. 6*d*. for "grinding money," and when he went to the foreman he was told that he had discharged himself and was not entitled to it.—Defendant's foreman said plaintiff had absented himself for ten days, and another man was taken on in his place. The judge thought plaintiff was entitled to recover, and ordered the amount, with costs, to be paid in a week.

Claim for "Extras."—At the Chesterfield County Court, on the 17th ult., the case of Fletcher v. Saul was heard. The plaintiff, a painter, sued the defendant, a building contractor, of Sheffield, for 22*l*. 14*s*. 5½*d*., being the balance of an account for work done to some cottages at Hasland, near Chesterfield.

It appeared that in January, 1876, plaintiff entered into a verbal contract with the defendant to paint twelve cottages at Hasland, inside and out, for the sum of 25*l*. During the time the work was being executed he received 20*l*. 10*s*. on the contract, but there were a number of extras which the defendant subsequently ordered. The defence was that the whole of the work was included in the contract for 25*l*., with the exception of about 25*s*. for varnishing the stoves. Judgment for the plaintiff with costs.

A Model-Maker's Claim.—In the case of Askey v. Harvey & Walters, heard in the Southwark County Court, on the 19th ult., the plaintiff was a pattern and model maker, and the defendants had a contract for supplying iron sashes for windows for the Small-pox Hospital, Old Kent-road.

The defendants applied to the plaintiff to supply them with models for sashes, the defendants agreeing to provide the drawings. The actual dispute was for 3*l*. for the window sash model. The plaintiff gave evidence to the effect that he received the order, but that no time was specified as to the completion of the order. Moses Harvey, one of the defendants, stated that he had made repeated applications for the sashes, and an order was ultimately given to Messrs. Parr & Watts, of Bermondsey. The judge said that he had no doubt that when the work was ordered no time was specified. Therefore it ought to be done in a reasonable time, and the time to his mind was reasonable. Judgment for the plaintiff.

Professional Services.—At the Westminster County Court, on the 26th ult., the case of Burrell v. Macpherson was tried. The plaintiff, a civil engineer, sought to recover 20*l*., money expended by agreement with the defendant.

In 1875, it was proposed to establish a company (of which defendant was chairman) to make a street tramway at Great Grimsby, and after some correspondence between defendant and Mr. Moseley (the solicitor for the company) and the plaintiff, the latter and his partner, Mr. Valpy, were chosen as engineers and surveyors of the said tramway, and under a letter (in the form of an agreement) written on the 4th of March last, by the defendant, the plaintiff was to be paid by him all costs out of pocket, and five per cent. on the outlay by the company, if the concern turned out prosperous. Plaintiff made several journeys to Grimsby, took the levels and surveys, and prepared the plans. He also, at defendant's request, got the prospectus printed, and did sundry work, in conjunction with his partner, to promote the success of the project, which was ultimately registered in July, 1875, but as the company had not proved a success, he had not (according to an understanding to that effect) made any charge for his professional services, but simply for his costs out of pocket. Judgment for the plaintiff, with costs.

Landlords and Tenants.—At the Brentford County Court, before Mr. Serjt. Wheeler (judge), two actions of Hankes v. Madge have been heard, involving the question of a tenant's liability for dilapidations. The plaintiff's case was that the house occupied by the defendant from Michaelmas, 1873, to Michaelmas, 1876, was left in a bad state, and would require an expenditure of 12*l*. 13*s*. (the amount claimed on the first summons) to put it into tenantable condition. The plaintiff admitted in cross-examination that the house was mortgaged at the time of the letting, and was still in the hands of the same mortgagees; whereupon the judge said that the plaintiff, not having the legal estate, was not entitled to maintain an action for an injury to the freehold. Judgment of non-suit, with costs.

Obstructing Light.—On the 26th ult., before the Master of the Rolls, Mr. Chitty, Q.C., appeared in support of a motion made on behalf of Sir Julius Benedict to restrain the erection of a building adjoining his house, No. 2, Manchester-square, which had the effect of rendering the room in which he received pupils and transacted other business so dark that he was unable to see without the use of artificial light. His lordship granted the injunction asked.

Claim for Portland Cement.—At the Whitehaven County Court, on the 23rd ult., the case of Longmire v. Carver was heard.

The plaintiff resides at Parton, and was an agent for the sale of Portland cement. On the 22nd of July last he supplied the defendant, who was about to build a house, with 44 cwt. of Portland cement at 3*s*. per cwt., and 1*s*. a-piece was charged for the bags containing it. The total amount due for cement and bags was 7*l*. 14*s*. Five months after the delivery of the cement the defendant complained that a portion of it was lumpy and unfit for use, and returned it, but offered to pay for the remainder. The plaintiff refused to receive the cement which was sent back, and brought the present action to recover the value of the whole of the cement supplied, and the bags. The defendant had paid 4*l*. 9*s*. 3*d*. into court, leaving a balance due of 3*l*. 4*s*. 9*d*. Judgment for the plaintiff.

CLAIM FOR PLANS AND LEASE.

NICHOLSON *v.* SIR E. BECKETT.

THIS was an action (heard in the Westminster County Court on the 1st inst., before Mr. Francis Bayley, judge) brought by a solicitor to recover 3*l.* 8*s.* 6*d.*, balance of account for preparing plans and a draft copy or copies of a lease granted by Lord Verulam in respect of a piece of land required for a roadway to defendant's premises.

From plaintiff's evidence it appeared that he was instructed by the defendant to procure a lease from Lord Verulam in respect to the road in question, and that the agreement was that plaintiff was to receive 4*l.* 4*s.* for his services, but that after a draft copy of the lease and plans were submitted to the defendant he found that sundry alterations were required in both, and for this extra trouble plaintiff claimed an extra two guineas. Defendant had sent him 4*l.* 4*s.*, which plaintiff refused to accept, and returned it.

Sir Edmund Beckett, Q.C., the defendant, who conducted his own defence, contended, first, that the plaintiff agreed to do the work for 4*l.* 4*s.*, and that he afterwards increased his charges to 6*l.* 6*s.*, in consequence of the so-called "extra" work which was caused by his own negligence; secondly, he held that Lord Verulam, who granted the assignment, was, according to the authorities which he cited, liable for all the legal expenses connected with the granting of the lease.

The Judge said he was of opinion that the defendant had made a distinct contract with the plaintiff, and had thereby rendered himself liable. Judgment would be given for the plaintiff for the amount claimed, and defendant, if so advised, could endeavour to induce his landlord to recoup him the amount.

MASTERS AND MEN.

Sheffield.—Two branches of the building trade in Sheffield are now agitating for an advance of wages. The bricklayers give notice of an advance of a halfpenny per hour, to take effect from the 4th June next, and the plasterers give four months' notice of an advance of 4*s.* per week.

Leith.—A number of labourers in the employment of two builders at Leith have struck work for an advance of wages from 6*d.* to 6½*d.* per hour. The higher rate is already paid by some of the builders in the town.

St. Austell.—The St. Austell clay labourers having failed to get help from other trade unionists, have now been advised by their secretary to return to work. During the strike, however, the masters have taken on non-union men; consequently those who have attempted to fight the battle to the bitter end will have to seek work elsewhere.

Leeds.—The Leeds cabinet-makers' strike, which has lasted nine months, has been settled, and the men have resumed work.

Lambeth.—Messrs. Doulton & Co. write:—

"Referring to our former communications as to the strike of bricklayers at our new buildings on the Albert Embankment, will you allow us to state that the council of the Operative Bricklayers' Society have at length withdrawn their pickets? They thus appear to have abandoned their attempts to compel us to discharge the two terra-cotta fixers, who continue in our employ. As the action of the council has met with almost universal condemnation, we refrain from any comment on the proceedings, except to say that our experience of this case strongly confirms the opinion so generally expressed that picketing in any form is as adverse to the true interests of the workmen as to those of their employers, and should be made illegal."

Bromsgrove.—The Bromsgrove nailers, at a meeting held on the 1st inst., unanimously resolved not to accept the reduction of 10 per cent. in the wages list proposed by the masters. It was further resolved not to take any iron until the whole of the masters agree to pay the full list price. At a meeting held on the 5th inst., it was decided to strike. A letter was read from Messrs. H. W. Lewis & Co., the proprietors of the nail factory, stating that in accordance with the terms of their contract they should require one week's notice from their men, and in default they will be prosecuted; but at the expiration of the notice they had no desire to discontinue work, but should reduce prices 10 per cent. conditionally that if the strike maintained list prices, the amount deducted should be returned to the men. The men state that they feel confident the strike will only be of short duration.

Chinese Coolie Labour for England.—The *Dundee Advertiser* says that a leading colliery proprietor has resolved, in spite of what has taken place in California and Australia, to import a number of Coolies into this country, and give us a specimen of Chinese cheap labour, and is negotiating on the subject with the Chinese ambassador.

The Trade Union Congress.—The Trade Union Parliamentary programme for the year 1877 has just been issued as follows:—1. A Bill to amend the law of compensation in cases of accident, so that the workmen or their families may sue an employer in the event of injury or death from accidents due to negligence. 2. A Workshop Regulation Bill for women and children. 3. The extension of the Factory Acts to bleaching and dyeing works. 6. The extension of the Employers and Workmen Act, 1875, to English seamen whilst in British waters. 7. Reform of the Patent Law. 9. An Act to prevent truck, by making compulsory weekly payments to workmen in the current coin of the realm. To this programme the Congress adds the questions of "Employment of soldiers in agricultural work," the "Efficiency of men in charge of boilers and steam-engines," the "Smoke Nuisance Act," and the "Sweating system in the tailoring and shoe trades," besides other questions.

WOODEN HOUSE FROM NORWAY.

THE house was built for Mr. John Fulford Vickery, North Swanton, Devon, who would no doubt give any particulars asked for.

SIR,—I have lately been giving some attention to the subject of Norwegian timber buildings, with the same object as your correspondent, "S. M. P.," and also for another special purpose. It is my intention to visit Norway in the spring to make myself fully acquainted with the method of construction, and to make arrangements for some buildings I propose to erect in this country.

I can advise your readers that great difficulty at present exists in getting a single house constructed to a special design (and the Norwegian plans will not suit our English notions), but where several precisely similar are required, they can be obtained at a very moderate cost.

ERNEST TURNER.

SIR,—In answer to "S. M. P." in your recent issue, respecting timber buildings suitable for labourers' cottages, &c., I beg to inform the writer of a system carried out by me, when employed as building foreman on an estate in North Wales some years ago. Our *modus operandi* was as follows:—Cut all foundations to a proper depth; fill up with concrete to say 2 in. below floor-line; build fireplaces and chimney-stacks in brick, arranged in centre of cottage; then raise the walls 1 ft. above floor-line of best Portland cement concrete, to form a base for superstructure; next lay a course of timber 7 in. by 1½ in. all round the building on the top of the walls, overlapping at the angles and partitions; then insert vertical bolts of ¾ in. round iron in all angles, in centre of timber, and along walls about 4 ft. apart; let the bolts reach to the top of the chamber-floor; then place upright blocks on the first row of timber, 1 ft. long, 7 in. by 2 in. on each side of the vertical bolts. Continue the horizontal timbers all round the building, as previously stated, on the top of the upright blocks; then more blocks and timber, till you reach the height for chamber floor; make the timber to carry floor joists a little stronger; lay floor-joists; put a row of timber on the same; screw down all bolts hard and firm with coupling nuts 2 in. long, the bolt end coming half-way through; then insert the bolt for the next story in the same coupling, and continue the building as previously stated, till ready for the roof, which is simply framed in couples, projecting eaves and gables. All openings for doors and windows are cut out after the building is covered in. All the buildings inside and out are lathed vertical to horizontal timbers, and covered with good lime and hair plaster, 1½ in. thick. The above can be built for about one-third the cost of brick or stone buildings, and far superior as a healthy dwelling, free from all dampness, which is the one great destructive agent to health and comfort. I speak from experience, having lived in one myself some time. The buildings I allude to are now as perfect as on the day they were finished, as a personal inspection would prove. The system would be invaluable in foreign countries subject to earthquakes and volcanic commotions, as the structure is bound together as one piece, and would resist a great amount of vibration before it would shake to pieces. Some people will say, where will your building be in case of fire? My answer is this, a timber building properly coated with good plaster, and built as I would direct, will resist the action of fire a long time,—in fact, I believe longer than some of our modern buildings of brick and iron, which are represented as fire-proof; but we have had sad experience of the fallacy of that in the last few years.

J. BROWN.

Heavy Damages.—In the Court of Exchequer last week the London and South-Western Railway were directed to pay 1,000*l.* to a builder's foreman, named Wakefield, as compensation for injuries sustained by him in an accident at Nine Elms.

A REFUGE HARBOUR AT DUNGENESS.

SIR,—I am glad to see you are drawing attention to the necessity of a harbour of refuge at Dungeness. The subject has been brought before the House of Commons by Sir E. Watkin, M.P. for Hythe; and I sincerely hope he will be well supported in carrying out his humane efforts to save human life and property. The east side of Dungeness is a roadstead formed by nature, which has also placed there in overwhelming abundance the materials wherewith to make a breakwater; and it is well known by all nautical men and others conversant with the peculiarities of the English Channel that this is the most suitable, if not the only proper place between the Downs and Portsmouth for the formation of a refuge harbour. Speaking as an old inhabitant and an agent for shipping during many years, I can testify to the great loss of life constantly recurring, and to the want of due protection to shipowners' property which now exists. Humanity calls for aid. On the first day of the new year, which will not very soon be forgotten, there were several ships in the Roads, one a large emigrant ship, which vividly brought to our recollection the fate of the *Northfleet*; but, happily, she slipped from her anchor just before high water and ran to leeward. A large steamer and other vessels rode out the gale, the holding ground being good—another fact strongly in favour of a refuge harbour. I sincerely hope that every effort will be made to carry out a proposal which would prove one of the greatest blessings not only to the mercantile marine and to the Royal Navy of this country, but also to the shipping of all nations.

T. B.

THE SOUTH SIDE OF THE THAMES.

SIR,—I notice in your issue of last week a letter from a correspondent suggesting a plan for constructing an embankment for the south side of the Thames on precisely the same principle as that which I (in conjunction with Mr. Douglas A. Onslow) proposed in a letter which appeared in the *Times* of the 15th of January. The plan was therein briefly described in the following words:—"We think the necessity for incurring this great expenditure for compensation (caused by cutting off the frontage of the wharfs if an ordinary embankment were made) can be obviated by constructing the embankment with an outer wall following, or nearly so, the southern river frontage, and an inner wall facing the present river front on the south side, the space between the inner wall of the embankment and the present river frontage to be of sufficient width to form a canal communicating with the river by either single gates or locks, the embankment to have a footpath and roadway next the river, connected at intervals with the present roads. The necessary protection would thus be afforded to the foreshore, and not only without injury to the frontages, but with the further advantage of enabling the barges and other craft to be afloat the whole day, instead of being, as now, stranded during low tide."

HENRY ROBINSON, M. Inst. C.E.

A MAP FOR CAB FARES.

SIR,—You will have remarked that this year's map of the "London Post-office Directory" is divided into squares corresponding to certain figures,—1 to 18,—from north to south; and certain letters,—A to X,—from west to east. It is pointed out in the preface to the book that these may be made useful in calculating distances. Moreover, in the street index the map letter and number is given under the name of each street.

Will you permit me to make a suggestion which, I believe, could be adopted to public advantage in connexion with this new arrangement? The map of Paris has long been similarly divided, and it has often struck me, on looking at it, that if a division of the same kind were carried out on the map of London, it might easily be made subservient to one or two important purposes of municipal administration. The one purpose to which I particularly desire to call your attention is the regulation of cab fares by means of the divisions in question.

The squares into which the Post-office map has been divided are 1½ in. across, *i.e.*, half a mile, according to scale. Now, supposing a rate of 3*d.* per square touched upon, in a straight line on the map, were adopted as the unit of charge,—the 1*s.* minimum for a single drive being retained,—it will be seen that the calculation of a fare from any one point of the metropolis to any other point, however distant, or however near, would become a very simple matter, about which no argument need arise that any police officer could not summarily decide. Take, for instance, a drive extending from the corner of Edgware-road to the Royal Exchange; the corner of Edgware-road is in H 9 square, the Royal Exchange is in O 9 square; the squares touched upon in this case would be,—H, I, J, K, L, M, N, O,=eight times 3*d.*=2*s.* Take, as another instance, the case of a drive extending from the Angel, Islington, in M 6 square, to Kennington Park, in M 13 square; the figures touched upon in this case would be,—6, 7, 8, 9, 10, 11, 12, 13=eight times 3*d.*=2*s.*

It will have been remarked that, in the instances supposed, the two extreme points of the drives had either a letter or a figure in common, whereas, in many cases, both the letter and the number might be different, as, indeed, whenever the drive extended diagonally across the map, instead of due north and south, or due east and west. Take, for instance, a drive extending from Edgware-road Station, Kilburn, in E 5, to Camberwell-green, in N 14. Two sides of the map have to be considered,—E to N=10 letters; 5 to 14=10 figures. The fare would then be reckoned thus:—10 figures plus half of 10 letters=15 times 3*d.*=3*s.* 9*d.* In case there had been an unequal number of letters and figures, say 10 and 13, the reckoning would have been: 13 plus half of 10=17 times 3*d.*=4*s.* 3*d.*,

the highest number being always taken in full, and half of the other added to it. This mode of counting would allow for the difference between the length of a side of a square and the length of the diagonal; indeed, somewhat to the cabman's advantage, but no one will grudge that, provided a stable, ready, and unquestionable system of ascertaining fares can be secured.

If the plan here suggested were adopted it would be necessary to publish, say under authority of the Commissioners of Police, a small table, which any one could buy for sixpence, of all streets in the metropolis, giving the letters and numbers of each: a sketch reduction map of London, divided into the proper squares might be added. Ample room for the names of all the streets in Paris, printed in small type, is found in the margins of the Paris map, so that a like table for London could be stowed in say coat-pocket or in any lady's reticule. By its means any one, whether acquainted or not with this big city, could at once find out the whereabouts of any part he might want to go to, and the cost of a cab-drive thither. Indeed, were the Metropolitan Board of Works to direct that the map number and letter be added to the name of every street, any stranger having lost his way in London, would find it again for himself, if he only remembered that the numbers run from north to south, and the figures from west to east. HENRY CHEVASSUS.

DISASTERS IN THE MINE.

SIR,—Permit me again to address you on the above sad subject, for murder underground is still going on. In my former letters to you suggesting modes of prevention, I pleaded and appealed in the name of humanity. Allow me now to reverse it. In the name of property, ye owners, adopt every practicable precautions to secure your mines. The Stonehill Colliery is on fire. This might have been prevented by dipping the brattice cloth in any of the many solutions which render such things incombustible. Wood-work the same. Some mines, ones on fire, burn many years; thus your property is lost. Why not have an iron pipe (size of rain-water pipe) from a blast-fan to supply vital air below? In the event of a fire, this fan and pipe would, in five minutes, extinguish any fire, however vast, by carbonic acid gas (ingredients kept ready). But, avast! owners,—first get the men out; not that they are property, but get them out. This pipe would also give timely warning when water is rising in the mine at the lowest place; holes in the pipes to admit water, which would be blown through to the far end, and squirt over an old watchman. All this is practicable; the outlay not great; besides, your property would rise in value. R. T.

"TOBIN'S SYSTEM OF VENTILATION."

SIR,—In your issue of January 27th I notice a letter on the above subject from Mr. Crozier, C.E., the county surveyor of Durham, stating that if the Tobin system of ventilation consisted of the admission of fresh air into a horizontal air-flue and transmitting the same into different apartments by means of smaller vertical flues, there was nothing new about it, inasmuch as it had been used in the county gaol at Durham since 1844. I may say that I had arranged for a similar system of ventilation for the cells of an extension of the Ipswich Borough Gaol which was purposed to be carried out about six years ago.

I have applied the system of ventilation by upright pipes to other buildings since that time, and before Mr. Tobin gave publicity to the plan. I observe from an illustrated advertisement that Messrs. Shillito & Shorland, of Manchester, claim to be the patentees of a plan which seems to me to be identical with Tobin's.

Neither Mr. Tobin nor Messrs. Shillito & Shorland can fairly claim the system as their invention, for the plan had been practised for years before they obtained their patents.

EDWARD BUCKHAM,
Borough Engineer and Surveyor, Ipswich.

*** There can scarcely be occasion for any further letters on this subject.

CHURCH-BUILDING NEWS.

Portobello.—The erection of a new Established Church for Portobello is about to be commenced in Duddingstone parish. The site is on rising ground, and the church is designed in the Early French style. The ground-floor area will measure 70 ft. long by 52 ft. broad, and 35 ft. high from floor to ceiling, and is designed to accommodate 530 sitters, exclusive of the choir seats near the organ. Additional accommodation to the extent of 270 sittings will be provided in the galleries. On the east side of the church will be a session-house capable of seating over 200 persons, and, on either side of the session-house, ladies' and gentlemen's waiting-rooms, with lavatories, &c., adjoining. The plans, furnished by Mr. T. B. M'Fadzen, architect, Edinburgh, have been approved by the Church authorities.

Godalming.—A vestry meeting was held on the 24th ult. for the purpose of considering the revised plan prepared by Sir Gilbert Scott, R.A., for the restoration of the parish church. It was resolved to adopt the revised plan, and that the committee be empowered to carry out the work.

Leominster.—The *Hereford Times* says that the work of restoration at Leominster Priory Church is being very satisfactorily carried on by the contractor, Mr. Charles Edwards, builder. The works now executed are stated to have given satisfaction, both to the representative of Sir Gilbert Scott, and to the local clergy and Restoration Committee. A few days ago the foundation-stone of one of the principal pillars of the south aisle of the nave was laid. The column has since been completed. Mr. William Prosser is the foreman of the works.

Towyn.—The committee of the Towyn Church restoration have ordered their architect to prepare amended plans and specifications, so that the work may be commenced in early spring.

Leigh.—The parishioners of Leigh, Dorset, have resolved that the churchwardens should obtain plans and estimates from Mr. Farrell, of Sherborne, for repairs and alterations of the parish church. It is proposed to add a new south aisle, also a new roof, vestry, &c.

Pirton.—Pirton, or, as it was known in ancient times, Periton, Herts, on the 18th ult. celebrated the completion of the first portion of the restoration of the old church—that of the tower. Some time ago the tower was condemned as unsafe by the architect, Mr. J. L. Pearson, and in July last the work was commenced. The tower was entirely pulled down, and has been rebuilt in exactly the same style and dimensions, with the Norman arches to nave and chancel, as originally. The cost of the work has been about 1,200*l.*, and the nave and chancel still require restoring. Mr. Bates, of Stevenage, was the contractor.

New Shoreham.—New Shoreham Church, near Brighton, was re-opened on the 8th ult., after restoration under the direction of Mr. Arthur Loader, architect. The works which have been in progress have, as our readers know, excited much criticism. The north transept has gained a spacious appearance by the removal of the old wooden partition which recently occupied half its space; and the old abortion, styled a vestry, has been swept away from the south transept. Passing into the choir and aisles, the removal of the many coats of whitewash which once overlaid them reveals the surface of stone-work, with its tool-marks and hard grain studiously untouched and preserved. The new north aisle windows are being filled in with stained glass from the manufactories of Messrs. Heaton, Butler, & Bayne, and Messrs. Cox & Sons. The formerly bricked-up windows in the clearstory and tower have been opened out, bringing to light, in the latter part, hidden carved stone columns, capitals, and bases. There is a new—said to be too large—carved pulpit from Durham Cathedral. Outside of the building the patches of brickwork have been removed, and made good with flintwork, and the "compo" on the west front has been knocked off. Mr. Bruton, of Brighton, was the contractor, and his foreman in charge was Mr. Tingley.

Moulton.—On the 16th ult. the Bishop of Chester consecrated a new church at the village of Moulton, midway between Northwich and Middlewich. The new church, which is dedicated to St. Stephen, is in Davenham parish, has been erected at the expense of the rector, the Rev. T. France Hayhurst, and, with the parsonage-house, has cost about 5,000*l.* The land was given by Mr. Robert Verdin, of the Newbridge Salt Works. The church is Gothic in style, with open roof of red pine, and seats of stained wood, varnished. There is sitting accommodation for about 300 adults and 50 children. Mr. Douglas, of Chester, is the architect; and Mr. Beckett, of Harford, is the contractor.

Linslade.—The committee appointed to carry out the repair of the church at Old Linslade, Bucks, have decided to abandon the original project of placing a new roof on the nave, and carrying out a few minor repairs, such as could only, after all, answer as a patch-up to an unsound fabric. They have called in the assistance of an architect, Mr. Lawrence, whose plans provide for the nave walls to be rebuilt, with battlements, and a new porch similar to that now existing, preserving as nearly as possible the present character and appearance of the building.

Whitechapel.—The new parish church of St. Mary, Whitechapel, was consecrated on the 2nd inst. The church (of which Mr. Ernest C. Lee is architect, and Mr. Chappell the builder) was fully described in the *Builder* for the 27th ult., p. 89.

Castlemilk.—On the 25th ult. the new church of St. Mungo, on the Castlemilk estate, in the parish of St. Mungo, Dumfriesshire, was opened. The church, which is built on a picturesque site adjoining the highway, and about 200 yards south-east of the old structure, was designed by the late Mr. D. Bryce, R.S.A., of Edinburgh, and cost about 5,000*l.* The old church was opened on the 7th of January, 1842, but since that time the population of the parish has greatly increased, and the accommodation and comfort not meeting the requirements of the times, in 1874 Mr. Jardine made an offer to the heritors that he would build a new church at his own expense and on his own estate, on the condition that he received the old church, the site, and the surrounding enclosure, his intention being, it is said, to convert this into a school. This offer was accepted. The church is built of a light-grey freestone, from Brookholm quarry, Linlithgowshire. The main feature of the building is the tower on the north-east angle, which is 19 ft. square, and rises to a height of about 70 ft. The interior measures 60 ft. by 40 ft., and will accommodate about 350 worshippers. The contractors were,—Masonry, Mr. Alexander Matthew, Edinburgh; joiners' work, Mr. T. Irving, Lookerbie; plumbing, Mr. Beattie, Lockerbie; slating, Mr. Anderson, Edinburgh; plastering, Messrs. Laidlow, Lookerbie; staining and varnishing, Mr. Carson, Stirling; and stained-glass windows, Jas. Ballantyne & Sons, Edinburgh.

Edenderry.—On the 24th ult. the parish church of Edenderry was reopened by the Bishop of Derry and Raphoe. The church has been closed for restoration during the past seven months, and has now undergone a complete remodelling of the interior. A new chancel has been added, as also a new porch and belfry, new vestry-room, &c. Within, the former uncomfortable arrangements have been superseded by cathedral pewing; and a Musgrave stone pulpit and reading-desk have been placed at the northern and southern sides of the chancel arch. The new building is of dark blue stone with white dressings from Dungannon quarries, the plans and designs having been supplied by Mr. John Kennedy, architect, Derry. The entire cost will be about 450*l.*

DISSENTING CHURCH BUILDING NEWS.

Liverpool.—Great George-street Chapel, Liverpool, is to be re-opened on the 11th inst., after enlargement according to plans by Mr. W. I. Mason, architect, Messrs. W. T. Tomkinson & Co. being the contractors. The enlargement consists of a new building contiguous to the chapel, and includes rooms for the chapel-keeper, comprising a living-room and two bedrooms; a large kitchen, where ample preparations can be made for tea meetings, whilst underneath this is a room for storing tables, forms, &c.; a commodious minister's vestry, with lavatory; and a deacons' vestry on the same floor, 22 ft. by 13 ft. 6 in. (with lavatory), which will be available for a large number of committees and classes connected with the chapel. The cost has been upwards of 2,000*l.*

Southleigh.—The new Wesleyan Chapel at Southleigh, which has been erected as a memorial of the Rev. John Wesley,—the founder of Methodism having preached his first sermon in Southleigh Church,—was formally opened on the 23rd ult. The building has cost about 600*l.* Mr. Charles Bell, of London, was the architect, and the builder was Mr. William Cantwell, of Newland, Witney.

Clogher.—The Presbyterian Church at Clogher, County Tyrone, was re-opened on the 26th ult., after enlargement and renovation. The work was entrusted to Mr. William Dunbarr, Killyfaddy, Clogher, and the plans were drawn by Mr. Wm. Cuthbertson, Clogher, and submitted to the approval of Mr. Wm. Mullin, architect, Omagh.

Brighton School of Art.—On Friday, the 2nd inst., the new school of science and art at Brighton was opened by H.R.H. the Princess Louise, Marchioness of Lorne. The building, which has been already illustrated and described in our pages, has been erected from the designs and under the superintendence of Mr. John George Gibbins, architect. Mr. George R. Lockyer is the builder; Messrs. Johnson & Co., of Ditchling, have executed the terra-cotta work; and Messrs. Pinker, of Cliftonville, the stone carving. The heating arrangements have been carried out by Messrs. Packham & Son, of Brighton, hot-water engineers.

SILICATE PAINTS.

IN the course of a lecture at the Society of Arts, "On the Way to make Workmen's Cottages Comfortable, Warm, and Healthy," Mr. F. E. Thicke said :—

I now come to a very important point with regard to rendering workmen's cottages healthy. I allude to the internal painting and decoration, with silicate paint for woodwork, and silicate wash for the walls and ceilings. These non-poisonous paints, manufactured by the Silicate Paint Company, of Liverpool and London, do not owe their existence either to accidental discovery or to a "happy thought," but are the results of long-continued research and experiment, to produce pigments free from the well-known objections to ordinary paints. The selection of silica as a basis was not a solution of the difficulty in itself, for silica in various forms and varying quality was already used in the production of rough anti-corrosive and silicate paints made by simply mixing silica in a more or less fine powder with the common painting colours. Silica was selected as the base because, when obtained absolutely pure, it has no chemical action whatever on iron or any of the metals; nor can it be destroyed by fire or by acids. Extreme cold also has no effect on it: in fact, it is an indestructible product, incapable of injury to the most delicate pigments with which it may be combined. The silica used by the Silicate Paint Company is obtained from a natural deposit of almost pure silex in North Wales. It is found in a basin of volcanic origin, which forms the bed of a small lake, and is doubtless the product of centuries of natural levigation. When dried it is found to be in the condition of a powder, finer than it would be possible to reduce it to by mechanical means. The first great difficulty to overcome, viz., the production of a non-poisonous white paint of good body, of course necessitated the discarding of white lead and zinc oxide. The new silicate white, a patented preparation of zinc, has all the good qualities of white lead without its attendant bad ones. It resists foul air, and retains its whiteness and opacity under all conditions, will withstand 500° of heat, has a covering power equal to the best lead, and, besides being non-poisonous, has no chemical action whatever on the metals. Of the other colours it will be enough to say they are one and all non-poisonous, and contain neither lead, antimony, arsenic, nor copper, in any form. The only disadvantage from which these paints suffer, in common with the ordinary painting colours, is the inability, as yet, to discover a vehicle for them to supersede linseed oil. A step in this direction has doubtless been made in the production of the petrifying liquid, though this is not applicable in all cases. It is certainly to be regretted that a more enduring medium cannot be found, as the silicate pigments will withstand, uninjured, a degree of heat that would utterly destroy the oil with which they are mixed.

In a recent letter to the *Times* on the subject of white lead *versus* zinc white, Mr. Barff, Professor of Chemistry at the Royal Academy, referring to the new silicate white, says, "I wish to call the attention of those interested in this question to the fact that they can obtain a better paint in all respects than white lead, and one that has no injurious effects on the health of those who prepare or use it." Mr. Geo. Godwin, also, speaking at the late meeting of the Social Science Congress, on the subject of damp houses, &c., alluded to the preparation of the Silicate Paint Company. He said,—"When we recollect the enormous amount of injury that lead paint did every year, and the number of persons who were damaged most seriously by it, and the difficulty of keeping damp out of houses, and when they found that this company claimed to meet these two points, it became obvious that their preparations were of the greatest importance."

The question of the cost of the silicate paint, as compared with white lead, being in many cases the all-important one, it is satisfactory to know that, notwithstanding the many advantages of the former, they are found in working to be from 10 to 15 per cent. cheaper. Though slightly dearer in the first cost, they have nearly double the bulk of white lead, and, weight for weight, will cover almost twice the space. Being cheap, non-poisonous, permanent of colour, of good body, damp proof, all but indestructible, and suitable alike for delicate interior decoration or the most exposed out-door wear these paints surely supply the painters' "desideratum." The increasing demand for the preparations of the Silicate Paint Company, particularly from the "trade"—met by the opening of an establishment in London—would seem to indicate that the prejudice with which innovation and improvement are generally received is in this case fast disappearing, and, I venture to predict the day is not far distant when the use of lead paint will be the exception rather than the rule.

Another specialty of the Silicate Paint Company is the petrifying liquid, for the cure of damp walls and the preservation of stone, brick, plaster, cement, &c., from decay. This preparation (also called the washable distemper) is a water paint, manufactured in two distinct forms, viz., as a transparent liquid, for indurating soft stone or brick when it is desirable to render it damp-proof without altering its character or appearance; and as a paste, in all colours. In the latter form,—apart from its damp-resisting qualities,—I propose to use it in the place of common distemper, for the decoration of bedrooms, corridors, staircases, passages, basements, kitchens, &c., presenting an appearance almost equal to paint, and, like paint, admitting of being thoroughly cleansed by washing; and I also intend to use it on the bare walls, which will save the cost of plastering; and I here invite your inspection of these samples, which I have had prepared to demonstrate the nice appearance, the economy, and the healthiness of this invaluable petrifying liquid. This petrifying liquid could also be used, at a very small cost, for the borders of all floors, and might be stencilled in patterns, as shown here on this margin. As it is also unaffected by disinfectants, the value of the petrifying liquid from a sanitary point of view cannot be over-estimated, and its recent introduction into the decorations of the School Board buildings, workhouses, prisons, asylums, and other large institutions must ultimately result in its general adoption for all buildings of this character, as well as by all persons who study the sanitary condition of the houses, not only of the poor, but of all classes.

The enamelling paint, which renders varnishing unnecessary, is the last of the decorative preparations manufactured by the Silicate Paint Company, and is a capital paint for superior interior work of all kinds. As its name implies, it is a paint drying with a hard, highly glossy surface, and, like the petrifying liquid and silicate paint, is admirably suited for damp walls. It will thoroughly prevent the penetration of moisture, however copious, when applied to the walls or foundations of dwelling-houses, railway arches, bridges, tunnels, viaducts, and other structures, and is invaluable for porous tile-roofs. Two coats of it are equal in effect to two coats of ordinary paint and two coats of varnish, while on clean ironwork one coat is, in most cases, sufficient. For the production of telling decorative effects at small cost, the paints of the Silicate Company are unequalled. As an example of this, one coat of enamelling paint, succeeding a coat of silicate paint on a surface previously treated with one coat of petrifying liquid, gives an admirable result, and has also the merit of speedy execution,—a point often of considerable importance. The enamel dries speedily, and, in combination with the silicate paint, has been used with the most complete success on damp walls, to which lead paints could not be made to adhere from the presence of excessive moisture. Recent experiment has also demonstrated that the enamel is not affected by chloride of sodium (common salt). Iron treated with one coat of this paint was exposed in the open air for months, in contact with salt, and watered at frequent intervals. After a considerable time had elapsed, the iron was removed and examined, when both the metal and paint were found to be in the same condition as when first applied. This has resulted in the use of the enamel for the protection of the iron ships engaged in the salt-carrying trade, which had always previously to be cemented internally, at great cost, with loss of space and increase of dead weight.

At the close of the lecture, the chairman, Dr. Richardson, said in the course of his address,—The silicate washes and paints which had been referred to were very important, and he considered them a great advance in sanitary science. He had seen structures where these paints were applied, and thought, with a little improvement, so as to remove the coarseness of the surface, they would be one of the greatest advantages in house construction.

Books Received.

Geography. By GEORGE GROVE, F.R.G.S. With Maps and Diagrams. Macmillan.

THIS is one of a series of "History Primers, edited by J. R. Green," and is an admirable and most successful attempt to present to children the general facts in relation to the geography of the earth in a simple but vivid and natural manner, very different from the unutterable dryness of the general rule of school geography books, and at the same time to teach the learner to think of the meaning of the words he uses, and to realise to himself the actual nature of the facts brought before him. When the tropics, for instance, are mentioned, it is explained that they are so called from a Greek word signifying "to turn," because at those points the sun seems to stop in his path, and turn back again. Some of us can remember for how long "the tropics" were mysteries to us, and regarded as having something cabalistic about them, just for want of a simple word of explanation of that kind. The manner in which rivers are formed, the meaning of the basin and water-shed, are made clear at once by the simple illustration of the roof of a house, with a gutter between two slopes. The small sketch of an iceberg, with the submerged portion seen through the water, will do more to give children an idea of the scale and character of bergs than telling them fifty times that there is "eight times as much under water as is seen above." A small map, in which the Atlantic is shown as if dry, and shaded so as to indicate the scenery and mountain ranges that lie beneath the sea, is very useful as giving an idea of the unity of character of the earth's surface. The attempt to explain Mercator's projection of the earth from the globe is perhaps as comprehensible to the youthful mind as it can well be made, though we are inclined to think this is, as some one said of the Catechism, "what they will understand when they are older." But in general the information is imparted in such a way as to make the children feel a real interest in it, and realise it as a description of the globe they live on, instead of looking at it merely as a matter of hard words. It is the very sort of book we want for them, and contains what may be very suggestive, also, to not a few older persons. The accomplished author has, we see, in preparation, a more advanced class-book of school geography, to be issued shortly.

The Church Rambler. London and Bath: Hamilton, Adams, & Co. 1876.

THIS book of more than 500 pages consists of a series of articles on the parish churches of Somersetshire and Wiltshire within a radius of a few miles from Bath. They originally appeared in that old-established journal the *Bath Herald*; and are now published at the "urgent request" of many friends of the Rambler, who from his own confession in a very modest preface is not a "professed" archæologist. In spite of, and malice might say in consequence of, this fact the description of several interesting churches—each accompanied with a sketchy illustration—is light and appropriate reading; and a good deal of local information is imparted which cannot fail to amuse, obtained as it is by personal observation and itinerant curiosity; or, in the words of the author, by "the poetic fitness of chance,"—a line of modern heroics which not the kindest intentions on our part can prevent us quoting in this slight review of a book intended for the public rather than any technical section of it. Yet at the same time the long account of Weston Church,—whose vicar during the restoration and enlargement of the building "endeared himself to his parishioners by sitting up in the churchyard through the night to see that the graves which had been uncovered were not disturbed,"—contains plenty of antiquarian incident, and is replete with anecdotes of events which have occurred in and around it during the last hundred years. The names of those who have been engaged in recent alterations or additions to the churches in question are scrupulously recorded; and both glass-painters and architects have received often the commendatory notice they doubtless deserved. Some of the quaint epitaphs to be encountered in rambles amongst country churchyards are introduced, and a curious one of the last century, which compares the world to "a city full of crooked streets" is shown to be the original of another, more refined, and of more recent date, in a

churchyard at Elgin. The latter is good enough to quote. It runs:—

"Life is a city with many a street;
Death is the market where all men meet.
If life were a thing which gold could buy,
The poor could not live, and the rich would not die."

If the old argument of the more sentimental Greek philosophy be capable of practical application,—and living people have attempted to apply it to modern schooling,—that children should be instructed in those technical matters which pertain to the trade or profession it is intended to give them,—an embryo parson, or even a budding archæologist, may get a good many hints as to training from the pages of a Church Rambler, who not only remained to pray in every church he visited, but always found something on which to dilate in situations where less good-natured critics would carelessly scoff. The book is well got up and suitable for a present both to young and old readers, especially those who are connected with the neighbourhood of Bath.

Fresh Air in the House, and How to Secure it. By Jas. Curtis, C.E. London: Ward, Lock, & Tyler.

Within the compass of thirty pages the elementary facts as to ventilation are set forth very clearly, and in the closing two pages Mr. Curtis gives his recommendation. The air, he urges, must in all cases be brought into the building from above; that is to say, by means of a pipe or pipes passing down from above through the roof, and so to the cellar or basement. It is much better during the construction of the house to leave openings in the front and back walls,—channels, in fact,—in the piers between the windows, for the purpose of admission; whilst for the exhaust, the pipe or pipes should be carried up in the chimney-stacks, so as to receive all the advantage possible from the heated flues, and as near the kitchen one as possible, because that is in use every day. The descending pipe has openings at the levels of the various floors, and is, in fact, an inverted syphon, with the long end uppermost, and will admit just air enough to replace what is consumed, and no more, whilst what it does supply is as pure as the locality can furnish. Its action will commence the moment that any diminution takes place in the rooms from whatever cause—as, for instance, the least increase of temperature of the air in the ascending or eduction pipe, and can only cease when all parts of the room are of one uniform temperature. The eduction pipe is virtually the short leg of the syphon, and cannot allow any cold air to descend through it into the room below, from the simple fact that the air contained in it is of a higher temperature, or more rarefied than that of the descending column, and is therefore specifically lighter. This pipe must be simply for the purpose described, and only have openings into the room, as close under the ceilings as possible, and on no account have any openings into the flues. Such arrangements as these would doubtless be useful.

Miscellanea.

The Alexandra Palace in the Auction Mart.—On Thursday the Alexandra Palace and grounds were offered for sale at the Mart, by Messrs. Norton, Trist, & Watney, on behalf of the mortgagees, and under an order in liquidation. There was an immense attendance, and the room not being large enough, the auctioneer sent a messenger to engage the Cannon-street Hotel; but that not being at liberty the sale proceeded. The first offer made was 300,000*l.*, the successive biddings advancing, by offers of 10,000*l.* each, to 445,000*l.* At this sum the auctioneer announced that the property was withdrawn, at the same time stating that it had cost 1,000,000*l.*, and that 800,000*l.* must be considered its fair minimum value. He invited private offers for the property.

Good Advice.—The operative rulemakers of Birmingham have presented Mr. Rupert Kettle with a handsome ivory rule. In acknowledging the presentation Mr. Kettle says:—"I trust it [the society] will hold together many years to faithfully and amicably carry out the important trade and personal benefits for which it is founded. Keep up your standard of quality, and you will maintain the prosperity of your trade against all competitors, and secure fair profit for the employer and fair wages for the workman."

London Bridge.—At a meeting of the Court of Common Council on the 31st ult., Mr. R. P. Taylor moved an instruction to the Bridge-house Estates Committee to obtain forthwith an estimate (with design) of the probable cost of removing the present granite wall, which is nearly 2 ft. on each side, doing away with the recesses, making the footpath 5 ft. wider, or 14 ft. 2in. in all, and substituting a light open balustrade. Mr. Moore seconded the motion, contending that the suggestion, if carried out, would conduce immensely to the comfort of foot-passengers over the bridge. Mr. Bedford would add words of this sort to the motion,—"And also to ascertain whether, by a re-arrangement of the present pavement of London Bridge, more accommodation could be given to passengers." Mr. R. P. Taylor was disinclined to adopt the variation. Mr. Heginbothom thought the proposal was like going back with the question relating to London Bridge. In 1869 a similar scheme was considered. It was merely playing with the subject to consider this small alteration. Mr. Shaw likened the proposal to a little patch, and submitted that it would not carry out the intentions of the citizens. It was agreed to add to the motion the words, "And report." With this alteration the resolution was carried.

Art Pottery.—Messrs. Mintons have (according to the *Staffordshire Advertiser*) just forwarded to London one of the largest pieces included in their contract for the decoration of the western staircase in the South Kensington Museum. This piece, which is not less than 54 ft. square, represents "The Triumph of Truth and Justice over Ignorance, Superstition, and Crime." Those who have visited the ceramic galleries in the Museum may have noticed that the lower part of this staircase is executed in embossed majolica by the same firm, and all the ceilings and a portion of the sides with stoneware tesseræ, cemented together in the fire, and afterwards painted with special colours. These being submitted to a strong heat, enable the work to resist the action of gas, acids, or any other deleterious agencies destructive of ordinary oil or fresco paintings. This is what is called the Campbell mosaic process, and the staircase when complete will include not less than eighty-four different parts (dome, panels, portraits, or borders). The piece just sent has been executed by Mr. H. W. Foster, an artist in the employment of Messrs. Mintons, from cartoons painted by Mr. F. W. Moody, of South Kensington.

The Metropolitan Board of Works.—Mr. Henry Bidgood, the St. James's Westminster representative,—one of the few now remaining original members of the Board,—in consequence of certain indications of declining health having set in, and yielding to the advice of his medical attendant and the persuasion of immediate friends, to relinquish the anxious and arduous obligations pertaining to the position, has resigned his seat. Mr. Bidgood first got his seat in a sharp contest with Mr. James Beal. That he has ever since retained the confidence of his vestry is sufficiently evidenced by the fact that on the occasion of each of the half dozen triennial effluxions of tenure of office, his re-election has always been by the unanimous vote of the vestry. Immediately on the announcement of the Board's official intimation of the vacation, Mr. Thomas Henry Elam, an old member of the vestry,—now churchwarden and chairman,—was unanimously elected St. James's future representative.

Cleopatra's Needle.—The *World* says,—"There is now no indiscretion in stating that the 'eminent surgeon,' recently alluded to in this column as having taken on himself the charges of conveying the obelisk known as Cleopatra's Needle from Alexandria to London, is Mr. Erasmus Wilson. He has made the necessary arrangements with Mr. Dickson, the well-known civil engineer, at an estimated cost of 10,000*l.* The obelisk will be surrounded with water-tight and air-tight casing of boiler-plates, will have a wooden keel and an iron deck, and will be towed through the Mediterranean by a powerful steamer." It is to be hoped that every necessary precaution will be adopted: it would be very easy to make a failure.

The North-Eastern Railway's Architect. Mr. Wm. Peachey, who went from Darlington to York a few months ago to act as architect to the North-Eastern Railway Company in succession to the late Mr. Burleigh, has (according to a Darlington paper) resigned his appointment just recently. Mr. Peachey's emoluments were 700*l.* a year and travelling expenses.

Proposed Widening of Walbrook.—A memorial, to which are attached upwards of 700 signatures, comprising those of Alderman Sir James Clarke Lawrence, the representatives of the ward in the Common Council, several members of Parliament, and many of the most important firms in the City, has been presented to the Commissioners of Sewers, calling their attention to the serious inconvenience and delay to business generally which is caused by the very inadequate access at present afforded from the neighbourhood of the Bank of England and the north of London to Cannon-street and the south. On the score of economy it is contended that there should be no further delay, because at a future time the value of the property required to widen the street will be greatly enhanced, and the mere cost of the regulation of the traffic by the police in Walbrook amounts to 285*l.* per annum, whereas with a wider thoroughfare but a small proportion of that expenditure would be necessary.

Landslip in Bath.—A serious landslip, which has been in progress some months, but has grown much worse during the recent heavy rains, is causing considerable anxiety in Bath. It is in the district known as Hedgemead, and forms the central part of the declivity the summit of which is known as Beacon Hill. Over an area of more than half a mile square the surface of the land has for many months past exhibited unmistakeable signs of subsidence, fissures in the walls of houses, cracks in new and stoutly-built masonry, fractures in gas and water pipes, and the contraction of doorways and windows, being the evidences. The city surveyor of Bath, by order of the Town Council, is keeping a vigilant watch on the district. The subsidence has recently become so active that some of the inhabitants have been warned that their houses are unsafe. It is thought the slip is the result of an underground current of water acting upon a bed of gravel or sand.

A Portrait Bust.—A short time after the presentation of a testimonial to Mr. and Mrs. S. C. Hall, on the occasion of their Golden Wedding, and in acknowledgment of their continuous and good literary services during a long series of years, it occurred to Mr. Llewellyn Jewitt, F.S.A., that some of Mr. Hall's more intimate friends might like to possess a bust of him as a memorial of the event. Mr. Jewitt accordingly asked a few to unite with him, and by his patient and friendly care the project has been carried to a successful end. The model was executed by Mr. Gallimore, who executed the Masonic bust of H.R.H. the Prince of Wales, and several other successful works,—under the eye, and with the finishing touches, of Mr. Goss, by whom it has been produced in Parian. It is an excellent and characteristic likeness, and will doubtless be sought for by many beyond the small circle for whom it was originally prepared.

The Discoveries at Mycenæ.—Dr. Schliemann, whose discoveries at Mycenæ are now attracting attention throughout the world, has returned to Athens, where he is engaged in the preparation of a work on the subject, to be published by Mr. Murray. It will be illustrated with 400 or more photo-lithographic plates of the treasures found. According to the *Levant Herald*, these photographs are now being executed under Dr. Schliemann's supervision at Athens, and he writes to a friend in that city that "they are excellent." "Unfortunately," he adds, "there is little hope that the treasures will be ready for exhibition in Athens before next summer, as the Archæological Society has not yet ordered the necessary glass cases, nor is the Academy ready for their reception. This will cause delay, as there is no suitable place here to expose a mass of treasure which would occupy an entire upper story of the British Museum." Dr. Schliemann is an American citizen.

Her Majesty's Opera House.—On the 1st inst. Her Majesty's Opera House, in the Haymarket, was offered for sale at the Auction Mart, Mr. Galsworthy (of Chinnock, Galsworthy, & Chinnock) being the auctioneer. It was stated that the rebuilding cost 60,000*l.* ten years ago, and that the theatre was held on under-lease, now held by Earl Dudley, for a term of years, expiring in 1891, at a rent of 1,834*l.* The highest bid was 26,000*l.*, by Mr. Nagle, of the Alhambra, who, however, afterwards said he had misunderstood his instructions, and withdrew the bid. Matters thus remain in suspense at the present date.

Proposed Street Improvement in Chelsea. At a meeting of the Chelsea Vestry on the 29th ult., letters were read (1) from Earl Cadogan as to a continuation of Oakley-street to Kensington, stating that he will be glad to promote, by any means in his power, the scheme for carrying a new street in a direct line from Albert-bridge to South Kensington, believing that, in promoting such a scheme, the Vestry were consulting the best interests of the district and its inhabitants; (2) from Mr. Gordon, M.P. (one of the borough members), on the same subject, replying that he will make a point of conferring with Sir Charles Dilke upon the question. It was resolved that the surveyor obtain a copy of the original plan of the proposed improvement, and that copies be furnished to the vestrymen and all persons interested in the scheme.

The Institution of Civil Engineers.—The eighth ordinary meeting of the session 1876–77 was held on Tuesday evening, January 30th, Mr. George Robert Stephenson, president in the chair. The paper read was "On the Combustion of Refuse Vegetable Substances for raising Steam," by Mr. John Head, C.E. A description was given of various means adopted; and in conclusion the belief was expressed that as the demand for mechanical appliances increased so would the difficulties of obtaining the best qualities of fuel for steam boilers in rural districts. It was thought, therefore, that the only method of rendering the use of steam power universal, particularly for agriculture, would be to construct the boiler of the engine so as to utilise the local supplies of combustible material of every kind.

Thames Valley Drainage.—It is stated that the town council of Kingston have resolved to oppose to the utmost the proposed formation of a united drainage district for the several towns and parishes in the Thames Valley. At a special meeting of the vestry of Barnes, held on the 1st. inst., resolutions were unanimously passed condemning the proposal of the Richmond Board of Guardians, who are the rural sanitary authority for the parish of Barnes, to establish sewage works on Barnes-common, and reiterating the opinion expressed by the vestry in resolutions passed in 1872 and 1874, "that it is not desirable to establish local drainage works, but that it is their wish to be united with other districts in a combination which may be sanctioned by the Local Government Board."

Labourers' Cottages for Maidstone.—Mr. S. Hornibrook, in a letter to the *South Eastern Gazette* on the dearth of labourers' cottages at Maidstone, says:—"Schools are built and kept up at great expense, but as the *Quarterly Review* once remarked, crowd parents, girls, and boys into one bed-room, and the Devil will far more than undo all that the school teaching can effect. Maidstone has never fail'ed to aid any philanthropic work. I hope that Mr. Peabody's example will stir up a resolution to provide decent homes for all our labourers, at a rent within their means. Over one hundred cottages have been removed in the centre of the town, and there are several yards and other cottages now crowded where few would like to live if they could get elsewhere."

Proposed Marine Palace at New Brighton. An issue of shares is announced for the erection, by a limited company, of a "grand marine palace" at New Brighton, Cheshire, which is a great resort during the summer months. What is proposed is the erection of an ornamental palace, with music and a variety of other attractions for visitors, a convenient site of eleven acres having been secured for the purpose; and this palace and its grounds is intended to be to this seaside resort what the Spa is to Scarborough, the Aquarium to Brighton, and the Pavilion to Southport. The total share capital is 100,000*l.* in 20,000 shares of 5*l.* each.

Great Find of Ancient Coins.—A numismatic discovery almost unparalleled in extent has been made near Verona. Two large amphoræ have been found containing no less than two quintals, or about 600 English pounds weight, of coins of the Emperor Gallienus and his successors within the hundred years following his reign. The number of coins is estimated at between 50,000 and 55,000.

Alarming!—A rumour reaches us that a block of residences *thirteen stories high* is about to be erected on the land belonging to the '51 Commissioners adjoining the east side of the Royal Albert Hall. It is to be hoped the Commissioners have preserved power of control over the elevation and arrangements.

The New Nisi Prius Court at Chester. Mr. T. M. Lockwood, architect, has presented a report to the county magistrates upon the buildings for the Nisi Prius Court now being erected under his superintendence. The works, although considerably retarded by the long-continued wet weather, have been so far advanced as to be ready for the roofing, the whole of the timbers being fixed, and the walls and stonework being very nearly completed. A considerable portion of the internal fitting and woodwork for the court is in course of preparation at Mr. Warburton's works in Manchester.

The Finsbury Printing and Stationery Works.—Messrs. Waterlow's new premises on the site of Finsbury-market were visited by the Architectural Association on Saturday last, when Mr. William Ward Lee, the architect, kindly explained the specialities in the mode of construction adopted. The premises were fully described and illustrated, with plans, section, and elevation, in the *Builder* for May 6, 1876 (vol. xxxiv., pp. 433—437), and therefore it is only necessary for us here to mention the visit of the Association.

Post Office.—The *City Press* says it is rumoured that the Government will require a very large tract of land in the neighbourhood of the Post-office for new buildings. Notwithstanding the erection of the new building in St. Martin's-le-Grand, the accommodation provided is utterly inadequate to the growing demands of commerce, so that the addition of a further building is necessary. The delays and irregularities arising from the present overcrowded state of the department are a subject of general complaint throughout London.

Worcester Dwellings Improvement Company.—The second annual meeting of this company was held on the 2nd inst. The directors purchased during the past year a building site in Stephenson-terrace, Britannia-square, Worcester, which they readily disposed of in lots at a satisfactory profit. They have also entered into an agreement for the purchase of the Worcester Model Dwellings (consisting of thirty-seven houses and other buildings). They recommended payment of a dividend at the rate of 6 per cent. per annum.

Cookery.—At *Brighton* the opening demonstration in connexion with the New School of Cookery took place on Saturday, when Miss Smithard delivered a lecture on high-class cookery, before a large assemblage of ladies. At *Canterbury* a crowded meeting has been held in St. George's Hall, for the purpose of establishing a local school of cookery. The mayor, who presided, said he knew of no subject of so much importance in the homes of the middle and working classes.

New Central Fire Brigade Station.—The Metropolitan Board of Works, at its meeting on the 2nd inst., decided to invite tenders for building the new head-quarters for the Fire Brigade at Winchester House, Southwark Bridge-road. The designs of the superintending architect, Mr. Vulliamy, embrace accommodation for the chief officers and the staff, together with workshops and other facilities for carrying on the work of the Brigade.

Yorkshire and North of England Land Agents' and Surveyors' Association.—This Association was established in 1866, and year by year the Society has gone on increasing in importance and usefulness, the number of its members being now upwards of forty. The president for 1877 is Mr. Carr, of Heslingham, near York. The Society has just celebrated its half-yearly meeting by a dinner at the Black Swan Hotel, Coney-street, York.

Proposed Raffaelle Celebration.—A movement is on foot in Italy for celebrating the four hundredth anniversary of the birth of Raffaelle, which, however, is more than six years off at present, as the great painter first saw the light on the 28th of March, 1483. It is proposed, as the first step towards the worthy celebration of such an event, to erect a statue or some other sculptured monument at Urbino, the native place of the great painter.

Burglar-proof Construction in America. Mr. Alexander Mitchell, the Wisconsin railroad manager, is building a bank building and safe depository in Milwaukee, and in the construction of his money vaults has made the floor, walls, and top, of two thicknesses of railroad rails, and has surrounded this barrier with a very thick wall of stone.

A Novel Apology.—At a recent meeting of the Killarney guardians attention was called to the defective sanitary condition of some house property in one of the lanes of the town. The chairman of the Board explained that the owner of the property,—a medical gentleman,—was so recently married that he had not had time to look after the nuisance complained of.

Iron and Steel Institute.—The Iron and Steel Institute general meeting has been fixed for March 21st and 22nd, when papers will be read of interest to the coal and iron trades. The British Iron Trade Association's annual meeting will take place on the 23rd of March; both meetings will probably be held at the Institution of Civil Engineers.

The Inhabited House Duty.—At the meeting of the executive committee of the Metropolitan Poor-Rate and Local Taxation League, held on the 31st ult., it was unanimously resolved to commence an agitation to obtain the total abolition of the Inhabited House Duty.

TENDERS

For the erection of Little George inn, and premises adjoining, at High-street, Chatham, for Messrs. Arkcoll & Co. Mr. G. Friend, architect. Quantities by Mr. T. Potter:—

Bishop	£2,471 7 2
Clements & Wallis	2,451 0 0
Blake	2,345 0 0
Tozer	2,330 0 0
Bridge	2,232 0 0
Naylar	2,144 0 0
Gates	2,092 0 0
Pankhurst	2,043 13 0

For alterations and additions to the Devonshire Castle, Harrow-road, for Mr. Brown. Mr. H. R. Cotton, architect:—

Williams	£1,324 0 0
Temple & Foster	1,183 0 0
Godden	1,170 0 0
Brown	1,163 0 0
Hanley	1,080 0 0
Toms	1,050 0 0
Lamble (accepted)	1,043 0 0

For alterations to the Unicorn public-house, High-street, Hoxton. Mr. W. A. Longmore, architect:—

Colls	£472 0 0
Gill	393 0 0
Pittman (accepted)	320 0 0

For warehouse, No. 2, Foster-lane, City, for the Rev. W. F. Dashwood. Mr. J. Lewis Holmes, architect. Quantities by Mr. Joseph Waghorn:—

Taylor & Grisk	£4,580 0 0
Merritt & Ashby	4,454 0 0
Somerville & Smith	4,434 0 0
Kirk	4,232 0 0
Scrivener & White	4,178 0 0
Kelly Bros.	4,095 0 0
Gould & Brand	3,989 0 0
Bayes, Bros., & Allen	3,947 0 0
Braid & Co.	3,900 0 0

For the erection of Wesleyan Chapel, School, and fences, at Spilsby, Lincolnshire. Mr. Charles Bell, architect. Quantities by Mr. Henry Lovegrove:—

	Chapel.	School.	Fences.
Lilley	£3,000	£900	£100
Hinson	2,836	816	77
Hobson	2,796	787	89
Hunter	2,771	750	83
Hensman	2,767	785	100
Priest	2,625	766	96
Laycock, Holmes, & Co.	2,227	650	88

For the erection of two houses at Spilsby, Lincolnshire. Mr. Charles Bell, architect. Quantities by Mr. Henry Lovegrove:—

Hobson	£1,874 0 0
Hinson	1,681 0 0
Hunter	1,600 0 0
Lilley	1,600 0 0
Hensman	1,560 0 0
Priest	1,443 0 0
Laycock & Co.	1,341 0 0

For rebuilding the Rising Sun, Reading, for Messrs. Byle: & Co. Messrs. Wm. & J. T. Brown & F. W. Albury, architects:—

Goodey (accepted)	£920 0 0

For alterations and additions to business premises, London-street, Reading, for Mr. James Winden. Messrs. Wm. & J. T. Brown & F. W. Albury, architects:—

Jenkins (accepted)	£972 0 0

For house at Henbury, for Mr. W. H. Butterworth Mr. W. H. Crisp, architect. Quantities supplied:—

Davis	£5,744 0 0
Hatherley	5,489 0 0
Hawell	5,189 0 0
Stephens & Bastow	4,999 0 0
Veals	4,800 0 0

St. Pancras Baths and Washhouses:—

Lefroe & Co.	£27,100 0 0
Hook & Oldrey	25,675 0 0
Sabey & Son	25,500 0 0
Prebble & Co.	24,990 0 0
Manley & Rogers	24,950 0 0
Smith	24,085 0 0
Battley	23,950 0 0
Bayes, Bros., & Allen	23,930 0 0
Crocket	23,900 0 0
Aitchison & Walker	23,890 0 0
Kirk & Randall	23,880 0 0
Nightingale (withdrawn)	22,743 0 0

For sheep-pens, cattle-shedding, and auction-ring, for New Cattle Market, Dorchester. (The formation of ground, iron fencing, and boundary walls, have been before tendered for.) Mr. Wm. Norman, engineer:—

Contract No. 1.—Sheep Pens.

Tracy & Co.	£246	0	0
Wire Fencing Company	245	0	0
Hill & Smith	244	0	0
Crocker & Co.	204	0	0

No. 2—Cattle Shedding.

Wellspring	£261	0	0
Davis & Son	239	0	0
Grey & Son	237	10	0

No. 3—Auction Ring.

Davis & Son	£545	0	0
Grey & Son	534	0	0
Wellspring	528	0	0

Stables, Goldhawk-road.—The tender of Messrs. Aitchison & Walker, at 2,322*l.*, has been accepted. The amount previously given to us was erroneous.

TO CORRESPONDENTS.

J. K. C.—C. S.—T. B.—Mr. T.—S. T.—Gargoyle—P. & R.—S. F. C.—H. L.—Mr. N.—R.—E. K.—J. R.—M. W.—W.—F. C.—J. L.—W. O'H. (take proper advice on the spot).—G. H. (engraving in progress).

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